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Columbia University Quarterly

Announcements

The leading article of the September number will be contributed by Professor J. E. Russell, Dean of Teachers College, who will discuss the relations between universities and professional schools for the training of teachers.

In the September number and later issues will also appear articles by Professor F. H. Giddings, on the life of students in the city; by Professor Brander Matthews, on the study of the drama in the city; and by Mr. W. A. Bradley, on the history of undergraduate publications at Columbia.

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COLUMBIA UNIVERSITY QUARTERLY

VOL. I JUNE, 1899 No. 3

COLUMBIA ALUMNI IN DIPLOMACY*

OF the thirty-seven statesmen who have, as heads of the department of foreign affairs, supervised the conduct of the foreign relations of the United States, six have been appointed from the State of New York—Robert R. Livingston, John Jay, William L. Marcy, William H. Seward, Hamilton Fish and William M. Evarts. Of these, however, two—Messrs. Marcy and Evarts—were natives of Massachusetts. Of the remaining four, who were natives of the state of New York, three—Messrs. Livingston, Jay and Fish—were graduates of Columbia.

During the greater part of our Revolution, the conduct of diplomatic correspondence was in charge of a committee of Congress, first of the Committee of Secret Correspondence and then of the Committee on Foreign Affairs. The results were unsatisfactory. Our representatives abroad constantly complained of the failure to receive even acknowledgments of their dispatches, to say nothing of in-

* Owing to the fact that the Department of State has published no historical register since 1874, it is difficult to gather information as to the recent personnel of our diplomacy. I am indebted to Mr. Alfred Roelker, Jr., a member of the class in international law last year, for an examination of the lists of alumni. Additions and corrections are invited and should be addressed to the Editorial Committee of the QUARTERLY.

structions on points as to which they wished to be advised. In a letter to Jay, of July 11, 1780, James Lovell, a member of the Committee on Foreign Affairs, makes an amusing disclosure of the causes of these omissions. "I am not entitled," saysLovell, "to throw the 'first stone,' but I have as good a title as anybody to palliate my own faults, and to shift them upon others. There is said to be a committee of foreign affairs; each member is loaded with a variety of business; two have amiable wives near Philadelphia; I miss the gentlemen, therefore, frequently. . . . The weather is murderous hot, and I cannot go up and down to the offices in search of those authenticated papers, which ought to be regularly forwarded to you and dignified officers abroad. You will be pleased, therefore, to know from me *individually*, . . . that Mr. Dohrman, of Lisbon, is appointed our agent in Portugal." To this statement Lovell adds other scraps of information, and he then closes with the remark that the committee had been instructed to draft an important communication to our ministers plenipotentiary at Versailles and Madrid. This evidently had not been done.

In view of these conditions, it is not strange that Congress in 1781 resolved that "a fixed and permanent office for the Department of Foreign Affairs ought forthwith to be established, as a remedy against the fluctuation, the delay, and indecision to which the present mode of managing our foreign affairs must be exposed." Pursuant to this resolution, Robert R. Livingston, of New York, a graduate of King's College of the class of 1765, was elected "Secretary of Foreign Affairs"—a post which he held from October 20, 1781, till June 1783, when, to the great regret of Congress, formally expressed in appropriate resolutions, he relinquished it. His administration of the office was able and energetic. So far as practicable he brought order out of the confusion formerly prevailing; and, instead of complaints from abroad, we find instructions to our ministers,

requesting them to be attentive and punctual in reporting upon the business with which they were concerned. His resignation was due to the pressure of his private affairs. With the "utmost economy" which his situation would admit of, he had, as he declared, "been compelled to expend something more than three thousand dollars beyond the allowances of Congress, exclusive of carriages, horses, and household furniture, all of which I brought with me. . . . Having given my whole time and a considerable part of my property to the public during the war, I see with pleasure that the affairs of the United States are not now in such a situation as to render the contributions of an individual necessary. It is my wish to endeavor to repair the injuries my estate has sustained by the ravages of the enemy and my own neglect by the offices I have held."

As chancellor of the state of New York, a position which he had held since 1777, Livingston administered the oath of office to Washington on his inauguration as president. In 1794 he declined the appointment of minister to France, but in 1801 accepted it, resigning the chancellorship. The great event that signalized his mission was the negotiation of the treaty for the cession of Louisiana. In this transaction he was joined with Monroe, but the latter did not reach Paris till it was practically completed. Monroe left in July 1803, and Livingston remained as minister till November 1804, when he took his leave and closed his diplomatic career.

The post of Secretary of Foreign Affairs remained vacant after Livingston's resignation of it till May 7, 1784, when it was filled by the election of John Jay, who had been a student at King's College with Livingston, graduating in the class of 1764, in which he took highest honors as Latin salutatorian. Jay brought to the office the experience derived from a long, varied and distinguished service abroad. September 27, 1779, he was elected by Congress, in which he had been a member of the Com-

mittee on Secret Correspondence, as minister plenipotentiary to "negotiate a treaty of alliance and of amity and commerce" between the United States and Spain. Gerard, in informing Vergennes of this appointment, said: "The choice of Mr. Jay leaves nothing to be desired. To much intelligence and the best intentions he joins a conciliating spirit." Jay duly entered upon his mission, and his careful and exhaustive reports attest the diligence and devotion with which, amid discouragements and vexations, he sought to accomplish its objects. The difficulties he encountered were, however, insuperable. The Spanish government, though sharing the antagonism of France to Great Britain, foresaw in the independence of the British colonies in America a menace to its own imperial interests. While it did not in terms refuse to negotiate, it demanded concessions which Jay was unwilling to grant. In a dispatch to Livingston of the 28th of April, 1782, he said: "We are at peace with Spain, and she neither will, nor indeed can, grant us a present subsidy. Why, then, should we be anxious for a treaty with her, or make sacrifices to purchase it? . . . Time is more friendly to young than to old nations, and the day will come when our strength will insure our rights." On the 14th of May Jay wrote that he had received a letter from Dr. Franklin, calling him to Paris, and that he would set off in about five days.

The summons to Paris related to negotiations for peace, in which Jay had been appointed by Congress to act, with Adams, Franklin, Jefferson and Henry Laurens, as a commissioner on the part of the United States. At this time Adams was detained by important diplomatic business in Holland, Jefferson had declined to serve, and Laurens, though in Europe, was on parole as a prisoner of war and therefore unable to act. In this situation Franklin, who had become involved in peace negotiations unexpectedly, requested Jay to come to Paris "as soon as possible," as-

suring him that he "could be of infinite service." Jay arrived in Paris in the latter part of June; and from that time till the end of October, when Adams appeared on the scene, he conducted the negotiations either in conjunction with Franklin or alone when Franklin was ill. On the 30th of November, 1782, was signed the provisional treaty of peace, which was made definitive in the following year, and of which it has been said that of all the treaties Great Britain ever made it was the one by which she gave most and took least.

When, in 1784, Jay assumed the office of Secretary of Foreign Affairs, the relations of the United States with other powers were difficult and uncertain, and it soon became his duty to deal with troublesome questions with France, Great Britain and Spain. In these matters he was greatly embarrassed by the lack of authority on the part of the federal government; but he was ever conscious of the dignity and rights of his country, and never failed to assert them. He continued in charge of the foreign relations of the nation till March 21, 1790.

In 1794 he undertook his last diplomatic mission. Important stipulations of the treaty of peace remained unexecuted, and our relations with Great Britain were still further complicated by questions of neutrality growing out of the first war of the French Revolution. Public opinion in the United States was divided, and popular feeling ran high. In this critical situation Washington, unmoved by the general excitement, determined to negotiate, and he selected as his plenipotentiary the statesman in whom he had testified his confidence by appointing him first Chief Justice of the United States under the Constitution. Jay, who continued to hold the office of chief justice throughout the negotiations, arrived in London in June, 1794, and on the 19th of the ensuing November signed the famous treaty which still popularly bears his name. It was fiercely denounced, and for several months was withheld from the

Senate, but in the end it was duly ratified and carried into effect. It was vindicated by its results, among which may be mentioned the recovery of $10,000,000 from the British government for violations of the neutrality of American commerce. The judgment of posterity upon it was illustrated by the recent celebration of its centennial day.

Among the great Secretaries of State of the United States, the name of Hamilton Fish will always hold one of the highest places. His name is also peculiarly associated with Columbia; for not only was he a graduate of the class of 1827, but he was for many years Chairman of the Trustees, and, after his death, his services and benefactions to the institution were commemorated by the title then given to a chair in the University. Mr. Fish was commissioned as Secretary of State on March 17, 1869; and, though he often desired relief from the cares of his office, he continued to hold it, at the earnest solicitation of President Grant, till the end of the latter's second term.

When Mr. Fish became Secretary of State, the unsettling effects of the Civil War were reflected in our foreign relations as well as in our domestic politics. It was a period of transition, in which character, ability and civil experience were required for the formulation of policies, and firmness, judgment and tact for their execution. All these high qualities Mr. Fish brought to the service of the government. His policy toward Spain—of intervening, if necessary, in support of our national rights and interests, while withholding from the Cuban insurgents a recognition of belligerency that was inconsistent with international rules which we had expounded—was followed without exception by subsequent administrations. In the prosecution of this policy he obtained from Spain indemnities for injuries to persons and property, and effected the settlement of the case of the "Virginius."

The most complicated subject with which, on taking charge of our foreign affairs, he was required to deal, was

that of our relations with Great Britain. The treaties made by the preceding administration for the adjustment of those relations were, with a single exception, rejected, and it became the task of Mr. Fish to construct for the negotiations a new basis. After twenty months of diplomacy, official and unofficial, in which his influential personal position played an important part, he brought about the Joint High Commission by which the Treaty of Washington of May 8, 1871, was concluded. In this negotiation Mr. Fish was chairman of the commission on the part of the United States; and "from the beginning to the end," says Mr. Bancroft Davis, who acted as American secretary, "his was the inspiring, regulating, and dominating mind." The treaty provided for the settlement of the Alabama claims, by the arbitration at Geneva; for the regulation of the northeastern fisheries, and the arbitration at Halifax of the question of compensation; for the adjustment of the San Juan water boundary, by a limited submission to the Emperor of Germany; and for the adjudication by an arbitral board of the claims, other than the Alabama claims, of either government against the other, arising out of acts committed against persons or property during the Civil War. The result of all these arbitrations, except that held at Halifax, was considered even in the United States as distinctly favorable to this country. The treaty also contained stipulations as to the navigation of certain rivers and canals and of Lake Michigan, the system of bonded transit and certain features of the coasting trade, and the exemption from duty of lumber cut on American territory watered by the St. John and floated down that river to the United States.

While the Joint High Commission was in progress Mr. Fish presided over a peace conference at Washington, between representatives of Spain, on the one hand, and of the allied republics of Bolivia, Chile, Ecuador and Peru, on the other; and on the 11th of April, 1871, he signed

with them an indefinite armistice, by which it was agreed that hostilities should not be renewed by any of the belligerents save after a three years' notification made through the government of the United States.

Upwards of thirty-five treaties and conventions were concluded and ratified during Mr. Fish's administration of the Department of State. His diplomatic correspondence was voluminous. Its quality is attested by the fact that the extracts from it in the International Law Digest are more numerous than those from the correspondence of any other Secretary of State. His tenure of the office was, indeed, longer than that of any other, exceeding by one or two days the respective terms of Madison, Adams and Seward, who come next in length of service; but, except in one or two cases, the extracts are more numerous in proportion to the time covered by them. This is in large measure due to the spirit of legality, as well as to the ability, that characterized his state papers. In his discussion of various questions, among which we may particularize that of citizenship and naturalization, he expounded doctrines which have served for the guidance of succeeding administrations.

Among the graduates of Columbia who have served in the Department of State, but not as Secretary of State, the first in order of time is George Taylor, Jr., of the class of 1792, who, on the 1st of April in that year, was appointed chief clerk, a position which he held till February 7, 1798. In this relation it should be stated that, prior to 1853, when the office of Assistant Secretary of State was created, the chief clerk was often called upon to act as Secretary of State in the conduct of correspondence.

July 1, 1807, John Graham, of the class of 1790, was appointed chief clerk. He had previously served as secretary of legation at Madrid, his commission bearing date August 31, 1801. He acted as chargé d'affaires *ad interim* from November 7, 1802, till February, 1803. He left Madrid in March, 1804. As chief clerk he served contin-

uously under Madison, Smith, Monroe and Adams, till 1817. He was then appointed, with Cæsar A. Rodney and Theodorick Bland, as a commissioner to visit Buenos Ayres and Montevideo, for the purpose of obtaining accurate information as to the conflict between Spain and her colonies. Rodney drew up the report; but Graham, after examining it, prepared a statement of his own, which was communicated with Rodney's report to Congress. January 6, 1819, Graham was accredited as minister plenipotentiary to the Portuguese court, then at Rio de Janeiro, where he remained till June, 1820, when he left on account of an illness of which in the following month he died.

James A. Hamilton, a son of Alexander Hamilton and a member of the class of 1805, was appointed by President Jackson, March 4, 1829, "to take charge of the Department of State and perform the duties until Mr. Van Buren's arrival in Washington." He discharged this function for about a month, and afterwards acted for the department unofficially in various matters. A full account of his services, with many interesting particulars, may be found in the published volume of his *Reminiscences*.

From November 21, 1887, till March 5, 1889, the post of Assistant Secretary of State was filled by George L. Rives, of the class of 1868. Mr. Rives was then, as now, a trustee of Columbia.

Walker Blaine, of the law class of 1878, held the office of Third Assistant Secretary of State from July 1, 1881, till June 30, 1882. In the latter part of 1881, he went with William Henry Trescot as a special envoy to Chile, Peru and other South America states. In March, 1889, he became solicitor of the Department of State, a post which he held till his death in the following January.

He was succeeded as solicitor by another graduate of the Columbia Law School—Frank C. Partridge, of the class of 1884. Subsequently Mr. Partridge held the post of envoy extraordinary and minister plenipotentiary to

Venezeula, and still later that of consul general at Tangier.

From February 15, 1892, till April 16, 1893, William Morton Grinnell, of the law class of 1881, held the office of Third Assistant Secretary of State.

The roll of Columbia's alumni, who have held diplomatic positions abroad, contains, besides those already mentioned in connection with service in the foreign department, many eminent names. First among these to be noticed is that of Governeur Morris, of the class of 1768, who was at college with Jay and Livingston. Washington in 1789 employed him unofficially to ascertain the disposition of the British cabinet, with reference to the settlement of the questions then pending between the two countries. He duly performed this mission, and in January, 1792, was appointed minister plenipotentiary to France. The appointment was made by Washington, not without misgivings; for, while entertaining absolute confidence in Morris' integrity and ability, he knew that he was not in sympathy with the revolutionary leaders who had gained the ascendency in France. In his own country Morris had been a supporter of the Revolution, a member of the Continental Congress, assistant to Robert Morris in the management of the public finances and a leading member of the Constitutional Convention of 1787. To mental gifts of a high order he united a capacity for public business. In the first stage of the French Revolution, he could "see every reason to wish that the patriots may be successful;" though he apprehended that the "crumbling matter" on which the edifice of freedom was to be erected would, when exposed to the air, "fall and crush the builders." He instinctively recoiled from the excesses that were committed when his apprehensions came to be fulfilled. Before he became minister of the United States, he offered his counsel to Louis XVI. He afterwards sought to effect that monarch's escape. His course was distasteful to the men in power, and he did not increase his popularity by his

strenuous efforts to protect American citizens and their commerce against the excesses of the revolutionary government. In a letter to Washington of February 14, 1793, he said: "I will not speak of my own situation: you will judge that it is far from pleasant. I could be popular, but that would be wrong. The different parties pass away like the shadow in a magic lantern, and to be well with any one of them, would, in a very short period, become the cause of unquenchable hatred with the others." The authorities of the republic took advantage of the request for Genet's recall to ask for his withdrawal. This act of reciprocity was ungrudgingly conceded, but Washington did not fail to assure Morris that his confidence in and friendship and regard for him remained undiminished.

At this place it is proper to mention another early graduate of Columbia, who, although he did not act as a public minister, rendered important service in an international transaction to which the United States was a party. This was Egbert Benson, of the class of 1765. As third commissioner under the 5th article of the Jay treaty, he cast the decisive vote in the determination of the river intended by the name St. Croix in the treaty of peace of 1783.

The commissioner of Great Britain under the article in question was Thomas Barclay, of the class of 1772. Barclay, who was a native of New York and a cousin of Benson's, adhered to Great Britain during the American Revolution, rising to the rank of colonel as a volunteer in the British army. He afterwards served as commissioner on the part of Great Britain, under the articles of the Treaty of Ghent for the determination of the title to the islands in Passamaquoddy Bay and of the northeastern boundary. During the war of 1812 he acted as agent for British prisoners in the United States. For many years he was the consular representative of Great Britain in New York. His correspondence has lately been edited and published by Mr. George L. Rives, one of his descendants.

John Slidell, of the class of 1810, was commissioned by President Polk on November 10, 1845, as envoy extraordinary and minister plenipotentiary to Mexico. Our relations with that country were then in a critical state, and Slidell was sent out for the purpose of making a last effort to negotiate. In March, 1846, the Mexican government, on the ground of the unsatisfactory nature of his powers, refused to receive him and he returned to the United States. He declined the post of minister to the Central American states under President Pierce. During the Civil War, he followed the fortunes of Louisiana, his adopted State, and served the Confederacy in a diplomatic capacity. On his way to Europe he was seized, with his diplomatic colleague, Mr. Mason, on board the British mail packet *Trent*, by Captain Wilkes, of the United States man-of-war *San Jacinto*, and was brought to the United States. The prisoners were soon released, on demand of the British government, and proceeded on their mission, which in the main proved to be fruitless.

Peter D. Vroom, who held various high offices in New Jersey, including those of chancellor and governor, was a member of the class of 1808. In 1853 he went as envoy extraordinary and minister plenipotentiary to Prussia, where he remained till 1857. No treaties of naturalization then existed, and he was much occupied with the claims of naturalized citizens of the United States, who, on their return to Prussia, their native country, were called upon to perform military service. In 1855 he was empowered to negotiate an extradition treaty with Baden.

Another diplomatic representative under the administration of Pierce was the late John Louis O'Sullivan, of the class of 1831. Mr. O'Sullivan was a fluent writer, and was one of the editors of the *Democratic Review*. In February, 1854, he was appointed chargé d'affaires to Portugal, and in the following June was made minister resident. He presented his credentials in the ensuing

October, and took his leave in July 1858. Not long after his arrival in Lisbon, he was startled by the appearance at his legation of an agent of the Kossuth-Mazzini revolutionary committee in London, who presented a letter as bearer of dispatches from the United States minister there. It turned out that the letter was improperly obtained, or at any rate improperly used, but the incident caused a feeling of concern in the mind of Mr. O'Sullivan, as well as in that of Secretary Marcy, to whom he reported it.

Henry C. Murphy, of the class of 1830, served as minister resident of the United States in the Netherlands from June, 1857, till June, 1861. It seems that on the occasion of his appointment, his fellow citizens of the city of Brooklyn, of which he had been mayor, banqueted him in a most sumptuous manner.

John Jay, of the class of 1836, held from 1869 till 1875 the post of minister to Austria-Hungary. September 20, 1870, he concluded with that government a treaty of naturalization, and on the 25th of November in the following year a convention concerning trade-marks.

Nicholas Fish, of the class of 1867, was assistant secretary of legation at Berlin from 1871 to 1874, and secretary from 1874 to 1877, when he went as chargé d'affaires to Switzerland. From 1882 to 1885, he was minister of the United States at Brussels.

The name of Eugene Schuyler, of the law class of 1863, is honorably identified with American diplomacy by his history of it as well as by his active service. From 1867 to 1869 he was consul at Moscow, and from 1869 to 1870 at Reval. For upwards of five years, he was secretary of legation at St. Petersburg, serving on occasion as chargé d'affaires *ad interim*. In 1876 he went as consul general to Constantinople. In 1878 he was consul at Birmingham, and in 1879 was sent as consul general to Rome. In 1880 he was consul general and chargé d'affaires at Bucharest, and later was minister resident and consul

general to Greece, Servia and Rumania. Our treaties with Servia and Rumania of 1881 were negotiated by him. At the time of his death he was diplomatic agent and consul general at Cairo.

A classmate of Schuyler's in the law school, who also achieved distinction in diplomacy, was William Walter Phelps. In 1881 he was appointed minister to Austria. In 1889 he was a member of the commission which negotiated the General Act of Berlin, in relation to the government of the Samoan Islands; and, on the completion of this labor, he remained in Germany as the envoy extraordinary and minister plenipotentiary of the United States.

William Waldorf Astor, of the law class of 1875, was minister to Italy from 1882 to 1885.

Richard Cutts Shannon, of the law class of 1885, served as secretary of legation at Rio de Janeiro from 1871 to 1875, acting much of the time as chargé d'affaires *ad interim*. From August, 1891, till the spring of 1893, he was minister to Costa Rica, Nicaragua and Salvador.

In July, 1896, Macgrane Coxe, of the law class of 1881, was appointed minister to Guatemala and Honduras.

Stewart L. Woodford, of the class of 1854, accepted in 1897 the post of minister to Spain, and discharged its duties in the trying times that preceded the severance of diplomatic relations between the two countries and the declaration of war in April of the following year.

Columbia is now represented in the diplomatic service by Oscar S. Straus, a graduate in arts of 1871 and in law of 1873. From 1887 till 1889, under the first Cleveland administration, he was minister at Constantinople. He returned to that post in September 1898, upon the solicitation of the present administration.

President Low, Arts '70, is now serving as a member of the United States commission to the Peace Conference at The Hague. Frederick W. Holls, Arts '78 and Law '80, is secretary to the commission.

Among the graduates of Columbia who have held the position of secretary of legation, but not that of minister, is William Beach Lawrence, of the class of 1818. He was commissioned secretary of legation at London, July 8, 1826; he acted as chargé d'affaires *ad interim* from October 4, 1827, till September 2, 1828; he left his post October 15, 1828, having previously resigned. This is the only diplomatic office he ever held, but as a publicist he ranks with the most eminent whom America has produced. Of his miscellaneous writings, which were numerous, a list, perhaps incomplete, may be found in the *Annuaire de L'Institut de Droit International*, vol. 4, pp. 38–40. His principal works were his two editions of Wheaton's *Elements*, that of 1863 being worthy of special mention, and his *Commentaire sur les Éléments du Droit International de Wheaton*. His library on international law was doubtless the most extensive and the most valuable ever collected in this country on that subject. In his famous litigation with Dana, he laid great stress upon the use of authorities which were accessible only in his own collection and which could have been cited only from his own edition of Wheaton. He was elected a member of the *Institut de Droit International* at its first session in 1873, and afterwards took an active part in its discussions.

John L. Lawrence, of the class of 1803, was commissioned as secretary of legation to Sweden and Norway, February 3, 1814. He acted as chargé d'affaires *ad interim* from June 6, 1814, till May 19, 1815, and left his post in January, 1816, having previously resigned.

Alexander Hamilton, Jr., class of 1804, was secretary of legation at Madrid from April, 1842, till July, 1844, during the mission of Washington Irving to Spain.

Henry Ledyard, of the class of 1830, was secretary of legation at Paris from 1839 till 1844, acting as chargé d'affaires *ad interim* from November, 1842, till June, 1844.

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Stephen K. Stanton, class of 1845, was commissioned as secretary of legation at Paris in June, 1848.

Romaine Dillon, of the class of 1835, held a similar position in Brazil from 1858 till 1861, and in Sardinia from 1861 till 1862.

Samuel Ward, Jr., "Rex Vestibuli," renowned for his various accomplishments, was a member of the class of 1831. In 1858 he accompanied Mr. Bowlin on his special mission to Paraguay as secretary; and, on the organization in 1860 of the mixed commission to adjust the claims of the United States and Paraguay Navigation Company, he became secretary and interpreter to the board.

John F. Delaplaine, Jr., of the class of 1833, held the position of secretary of legation at Vienna for fourteen years, from 1869 to 1883. He was often called upon to act as chargé d'affaires *ad interim*, and a number of his dispatches may be found in the volumes of foreign relations.

James R. Hosmer, of the class of 1855, was appointed in March, 1887, secretary of legation and consul general to the Central American States.

Under the same administration (the first of President Cleveland) Thomas B. Connery, Law '64, became secretary of legation in Mexico; Augustus Jay, Law '76, second secretary of legation at Paris; and Charles Chaillé-Long, Law '80, secretary of legation in Corea.

It thus appears that Columbia has furnished three of the heads of our foreign office, and a special temporary incumbent of it; an assistant secretary of state; two third assistant secretaries of state; two solicitors and two chief clerks of the Department of State; fourteen ministers plenipotentiary; five commissioners and two special agents or envoys; three ministers resident; three chargés d'affaires; one diplomatic agent and consul general; and fifteen secretaries, as well as an assistant secretary, and a second secretary, of legation.

JOHN B. MOORE

HAVEMEYER HALL.—NORTH ELEVATION.

THE FACULTY OF APPLIED SCIENCE

The group of professional schools under the jurisdiction of the Faculty of Applied Science has grown from the Department of Chemistry and from the School of Mines established in 1863. Until 1896 the School of Mines included the Departments of Architecture, Chemistry, Civil Engineering, Metallurgy and Mining, each with a four years' course of study. In 1896 the Schools of Architecture, Chemistry, Engineering and Mines were formed under the governing body of the Faculty of Applied Science. The latter faculty is essentially identical with the former faculty of the School of Mines; but various departments have been transformed into schools, so that those courses sustaining the closest relations with each other have been grouped into the four schools under the jurisdiction of this newly formed faculty. This organization is deemed to be more advisable, in that the nature of the courses and of the work done in each school is more accurately indicated under the new arrangement. The necessity for this development arose from the increase in the numbers of students taking the several courses.

The growth of these schools has, therefore, been for the most part concurrent with much of the development of technical life in this country. Although many material interests depending upon chemistry and engineering had their inception prior to the opening of the technical schools at Columbia, they—as well as many kindred interests—have felt in their progress and development the direction and stimulus of the efforts of those who have acquired their technical knowledge in the schools which are now aggregated under the Faculty of Applied Science. Indeed, so much chemical, mining, engineering and architectural work has been done—and well done—by the graduates of the professional schools of Applied Science, that it is prob-

ably no exaggeration to state that the corresponding professions have been brought to their present state of excellence as much by the educational work of Columbia as by any other one influence.

These schools have been founded and developed on the fundamental principles that their educational work must lie along strictly professional lines and that their systems of instruction, no less than their purposes of administration, must be such as to lead efficiently to that end. In other words, these schools have been designed to be consistent and vigorous members of the University. They are not centres of instruction in which young men are to acquire, on the one hand, certain skill in manipulating appliances or excellence in mechanical handicraft; or, on the other, that general mental training—so essential to the broadly educated man—which is acquired in the college; but rather that advanced knowledge in the application of the mathematical, chemical and physical sciences—both in the "art of directing the great sources of power in nature to the use and convenience of man" and in that portion of the fine arts related to structural design—which forms the basis of the best professional work in all the fields of chemistry, in civil engineering in its broadest and only true sense, in mining and in architecture. The formation of courses of study of this character involves the assumption that young men who desire to pursue them must possess such qualifications as will relieve them from the further consideration of subjects commonly found in a college curriculum leading to the bachelor's degree. Not only will that relief enable them to devote all their subsequent time to professional studies, but their prior educational training will give them the power to pursue those studies with greatly enhanced efficiency.

The serious difficulty which has hitherto at least partially defeated the full attainment of the ideal professional school in applied science is the lack of range or excellence

in the general training of the preparatory schools. This condition was, however, remedied at Columbia in the most effective manner possible, on the removal of the University to its new site, by arranging suitable courses of study in the College, so that the first- and second-year subjects in the Schools of Mines, Chemistry, Engineering and Architecture may now be taken as electives in the third and fourth years of the College course leading to the bachelor's degree. On the completion of the College course thus constituted, the graduate candidate may enter any of the professional schools under the Faculty of Applied Science at the beginning of the third year, leaving two years of purely professional study to be completed. Under this most excellent scheme of study, a student completes his educational training six years from the time of his entrance into College. His course of study is comprehensive and well-rounded. The general educational training of the College course not only aids in giving him those qualities which make an educated man in the best sense of the phrase, but also equips him with trained mental powers to pursue his professional studies with the minimum of effort and the maximum of result. Those studies are, furthermore, approached with an enhanced estimate of intellectual work and, hence, with both a higher view of their value and a quickened power of acquisition. The truly university courses of study in Applied Science thus have—for the first time in this country, at least—a real, living, professional character. The young man who completes them possesses the richest and best-balanced equipment for higher work in the technical professions which it is possible to acquire in this or any other country.

The establishment of these six-year courses of study at Columbia, as an alternative in place of the four-year courses with the usual preparation, marks a real epoch in the technical professions which ought not to be allowed to pass without appropriate consideration. It places the edu-

cational training of chemists, engineers and architects on the same university plane with law and medicine, and precisely where it belongs. That training should be such as to confer on those who avail themselves of it a broad and advanced preparation for the beginning of the best quality of professional work and for its symmetrical subsequent development. Without the foundation of a general education, this is just as impossible in the technical professions as it is in those of law and medicine. The former are the youngest of the professions; and the fact that their aid, however crudely rendered, has been imperatively necessary in all the material progress of the past half century has, for the time being, obscured the necessity of a more finished educational preparation of those who are to pursue them under the riper conditions already existing. The establishment of the continuous courses of study in the College and under the Faculty of Applied Science is a most effective measure for raising the standard of professional attainments. The resulting influence on the technical professions, through the direct effect at Columbia and the stimulation of similar courses undoubtedly to be established at other universities, cannot fail to be in the highest degree beneficial.

It is eminently appropriate that this perfecting of the courses of study under the Faculty of Applied Science should have been consummated at the time when the university was manifesting its abundant measure of vigorous life by taking possession of the new site. Greatly enlarged quarters for the different departments have made possible a considerable development of laboratory plant and facilities of every kind. Indeed, the expansion which has taken place in all directions demonstrates the fitness of steadily enlarging this educational work, so as to meet fully the technical demands which exist and which are destined to grow at an accelerated rate.

In the city of New York, and in that portion of the

country tributary to it, the engineering and allied professions have in all respects assumed the most advanced state in this country, if not in the world. Those professions demand, therefore, for the young men who are to enter them an educational training of the best quality that the university can give. The young men must not only be fitted to discharge their immediate duties in a creditable manner, but they must be prepared to advance the conditions of their respective professions: in other words, they must be leaders in their callings in both professional thought and action. Columbia has performed the duty of meeting the exacting requirements of this situation by the establishment of courses of professional study in Applied Science based upon the broad and liberal training imperatively necessary for the truly professional education.

In every school under the Faculty of Applied Science, each department has established its course of study, unrestrained by any consideration other than that of attaining the most efficient results. This independence in forming the courses of study has afforded to each department the amplest opportunity, not only to adjust its educational work to the demands of the profession which it serves, but also to direct its influence along the lines of professional progress. As a matter of fact, the various fields of engineering work (including mining and metallurgy) and architecture overlap and interlace with each other at many points: indeed, it is impossible to draw well-defined lines of demarcation between them at all points. They have many things in common, and a practitioner in one field can attain to the highest excellence in it only when he possesses at least a knowledge of the general principles of those portions of the other fields lying adjacent to his, to which at times he must give attentive consideration. This catholicity of professional life, reaching to chemistry as well as to engineering and architecture, is a matter of much gravity, which deserves more serious consideration

than is usually given to it in these days of excessive specialization.

Any course of study restricting itself to the treatment of those bare subjects which, upon a superficial view of the case, appear to have the most direct relation to the practice of a specialty, is narrow and faulty. A student pursuing such a course of study restricts his mental operations to the least number of subjects and to the smallest range in any one subject. No object of his attention seems to have a broader meaning than that which attaches to, or is supposed to attach to, some practical action. Its bearing upon broader things and its aid to him in reaching out to the widest and best practice is obscured, if not entirely lost to sight. His subsequent professional activity is cramped and ill-developed, and he fails to reach what may be called symmetrical excellence even in his own specialty.

Besides these considerations of a somewhat material character, a markedly specialized course of study fails in another most important particular. The complete purpose of a course of study in any professional school is found, not altogether in the preparation which it provides for a young man to enter into the practical part of his professional life, but also in the educational finish with which it should endow him. His course of study should be such as to shape his aspirations towards doing his life work with that accuracy and completeness, and with those intellectual and moral qualities, which are supposed to characterize the well-rounded and ideal professional man. In other words, a young man's training in the university for his life work should have in it that which makes for the best qualities of mind and character. A course of study narrowed to the material practicalities of a specialty will not produce such professional strength and cultivation; nor, indeed, will it often produce high efficiency in the specialty.

The freedom and comprehensiveness with which the courses of study in the Schools of Architecture, Chemis-

try, Engineering and Mines have been established have secured to them, not only the qualities which bear directly upon purely practical affairs, but also those which broaden the professional man. These ends are attained to the highest degree when the preliminary general training is taken in the college; for the work of the professional school is thus completed under the most advantageous circumstances. The overlapping of fields of engineering work, and even of fields of that work with chemistry and architecture, which creates the demand for broad educational training, is fully recognized in the co-ordination of the various departments in the schools of the Faculty of Applied Science. The course of study in each department is composed not only of those subjects peculiarly its own, but also of all those of other departments which are requisite to a well-rounded educational training for its particular field. In this manner every course of study secures the best results of the work of every other course adapted to its purpose. All schools and all departments under this Faculty thus stimulate each other and by contributing to a mutual and simultaneous growth effect a development of the greatest efficiency. Each course of study, as thus carried on in each department, by this drawing on the others for those things which are essential for its welfare, in the broadest sense of the word, and which those others can best supply, attains at once a broad intellectual character and the most efficient training in its special work.

This admirable combination of technical excellence with a broad professional character based upon preliminary liberal training is the distinguishing feature of the courses of study now established in the applied science at Columbia. It is a development so well guided by educational wisdom that it meets the demands of the times in the best possible manner, both as to immediate professional practice and further advance. There is easily recognized in it the application of those general principles in accord-

ance with which active concentration of advanced technical study has been made in the universities during the past twenty-five years. Herein lies the beneficial effect of a university environment upon professional courses of study.

School of Architecture.—The four years' course in architecture is so formed as to cover effective applications of the principles of art to structures, as well as to give to the students pursuing that course sufficient training in the principles of what may be termed architectural engineering. The general purposes governing the instruction in this course are best set forth by the following excerpts from the general statement in the department circular:

"The instruction in ornament extends through the first three years, accompanying and illustrating the studies in ancient, mediæval and modern architectural history. It comprises the study of the decorative details of the different styles, and of the contemporary forms in other branches of art, especially the decorative arts employed in building.

"The instruction in drawing and design includes exercises in the ordinary processes of draughtsmanship, the making of plans, elevations, sections and details, both on a large and on a small scale; the use of pencil and pen, brushes and colors, with auxiliary exercises in tracing and in sketching from drawings, photographs and actual buildings.

"During the first three years the scientific study of construction is taken up, under the name of architectural engineering, and carried as far as is necessary for an intelligent understanding of the engineering problems that occur in ordinary structures. Under this head analytical geometry, the calculus, mechanics and engineering receive consecutive treatment. The principles of statics and of the strength and resistance of materials in their application to buildings are taught, both graphically and analytically, and are illustrated by practical examples. But this is not intended to enable every architect to do his own engineering. This is reserved for the elective course of constructive practice.

The marked feature of the fourth-year work is the large amount of original design in the draughting-rooms of the school, comparatively little time being taken up with lectures and class-room exercises. The completion of the four-years' course in architecture leads to the degree of bachelor of science. Graduates of this, or of any other advanced school, may also pursue university courses of study for which they are qualified, as a preparation for the degrees of master of arts and doctor of philosophy in archi-

CHEMICAL LABORATORY.

tectural history and design or in architectural engineering and practice.

The equipment of this school consists of a large number of photographs and books, a classified library of prints and plates, the Avery Architectural Library of about 15,000 volumes, collections of manuscript drawings, casts of architectural details, the architectural museum and a large number of lantern slides of architectural subjects. In addition to this equipment, the Willard collection of architectural casts at the Metropolitan Museum of Art is daily available to the students of the school.

School of Chemistry.—There are in this school three parallel courses each consisting of four years of instruction and each leading to the degree of bachelor of arts or to the university degrees of master of arts and doctor of science—namely, in Analytical Chemistry, Industrial Chemistry and Organic Chemistry. During the first two years they are identical. In the third year the courses in Analytical Chemistry and Organic Chemistry are identical, with a differentiated alternative for Industrial Chemistry. In the fourth year three separate schemes of study are arranged.

"These courses of instruction are designed for the education of professional chemists who intend to devote their lives to the practice of this profession, either as teachers in colleges and scientific schools, or as experts or managers in manufacturing and other industrial enterprises.

"The courses of instruction include not only all branches of theoretical, analytical and industrial chemistry, but also of the other collateral sciences which have been found by experience to be required by the professional chemist, such as mathematics, physics, crystallography, mineralogy, microscopy, bacteriology, metallurgy and drawing. It is the intention to provide the graduate not only with a thorough knowledge of the principles and practice of chemistry in all its branches, but with such a broad and liberal education in the collateral sciences as will prepare him for the demands made on him in after-life in connection with his profession, and also to enable him to become an investigator."

The work of the School of Chemistry has been developed to its present state of breadth and efficiency in the light of extended experience over a period of many years. University students are admitted to studies in this school for the

degrees of master of arts and doctor of philosophy and for special advanced study.

The equipment of the School of Chemistry consists of the large general museum, containing the elements and all their more important compounds, materials, models, diagrams, and products illustrative of the science and arts of chemistry; and the various chemical laboratories, completely fitted with every appliance and apparatus for the most varied and comprehensive range of laboratory work. The qualitative and general chemistry laboratory has been largely refurnished with new fittings, and each desk is completely equipped with every needed detail. In the general chemistry laboratory students prepare the more important elements and their inorganic compounds. The qualitative laboratory is principally used by the students in pure and applied science. In this laboratory reactions of the various metals and salts are taught with a view to their separation and identification. The qualitative laboratory has also a complete equipment for each desk. Attached to the main laboratory is a large and well-equipped balance room, besides small rooms equipped with the most improved apparatus for gas, water and electrolytic analysis. The organic laboratory is peculiarly adapted to its particular class of work. "It is thoroughly equipped with all necessary apparatus for the determination of boiling-points, melting-points, specific gravities, vapor densities," and other important chemical and physical operations connected with organic compounds.

The laboratory of industrial chemistry is "planned for the instruction of students in the practical operations of chemical manufacture and chemical industries, and in the solution of various important problems in sanitary chemistry and hygiene." Its equipment is most complete and efficient for all purposes connected with educational training in this field of chemical work, including the purification of water and sewage, fermentation and distillation.

The new laboratory of physical chemistry is "well-equipped with the most recent apparatus adapted to a wide range of experimental work in the branches of heat, light and electricity as applied to chemical problems." Both second- and fourth-year students perform work in this laboratory. The assay laboratory is "provided with crucible and muffle furnaces, both coal and gas, for the fire assays of ores," and with other machinery and apparatus for a wide range of essay work.

SCHOOL OF ENGINEERING: *Civil Engineering.* The four-years' course in Civil Engineering, leading to the professional degree of civil engineer, is organized and administered so as to be consistent with what may be called the historic view of civil engineering—namely, that view which makes civil engineering include all engineering except military and naval engineering. In its broadest and best sense civil engineering deals with all questions of structures and problems of power, and it has been the aim in forming this course to make its scope just as comprehensive as those two fields. Its general purpose is stated as follows in the department circular:

"The four-years' course leading to the degree of civil engineer is designed to afford a thorough analytical training, as well as numerous and extended practical exercises in those matters which pertain to the profession of the civil engineer, both in regard to all classes of structures and public works and in connection with the various developments and applications of power by the use of steam, electric, water and air motors This course is also designed to be an educational preparation for those duties or functions of an executive character, whose discharge in connection with the management of public or other works requires, or is rendered more efficient through, a thorough knowledge of civil engineering. The breadth and nature of this educational training adapts it no less efficiently to the purposes of those who intend to follow callings not of an engineering character, but which may be related to manufacturing, to structural matters, or to the development and application of power.

The broad character of the course, as thus set forth, requires that the foundation of mathematical and physical studies should be laid with the greatest care. It will be

observed, therefore, that during the first two years a number of subjects are found which are given in the departments of mathematics, physics and chemistry. The rapid development of electrical engineering has also prompted the introduction of subjects given in that department during the second and third years. It is further the intention to establish an electrical engineering alternative for the fourth year, so that those students taking the course in civil engineering may substitute for a portion of the present fourth-year work subjects leading to a more extended development in electrical engineering.

A complete course in Sanitary Engineering has been established, but it has not yet been fully given. This course is naturally a differentiation from the course in Civil Engineering, and for the first year and a half is identical with the latter. In the last two and a half years a number of subjects in hygiene, sanitary science, general biology, microscopy, microbiology and heating and ventilation, displace a corresponding study of structural steel-work and power subjects. The course is admirably adapted to meet the most advanced and exacting requirements of sanitary engineering of the present day. The completion of this course also leads to the professional degree of civil engineer. A number of major and minor subjects are also offered in this department for university students working for the degrees of master of arts and doctor of philosophy.

All professional subjects in this department cover actual design work. The field-work in surveying, of which there is a large amount, from the elementary pacing survey to the final location survey of a railroad line, is done during the three summer vacations in the course, at the Summer School of Surveying, for several years located near Litchfield, Conn.

The equipment of the department is remarkably complete in all classes of surveying instruments and accessories, and the entire equipment is made use of at the Sum-

mer School of Surveying. The cement-testing labratory is fully fitted with cement-testing apparatus, including that for fineness, checking and hot or accelerated tests. It also contains a simple lever-testing machine for testing blocks of cement, mortar, concrete and other materials. The laboratory for testing road materials is being fitted with apparatus for testing abrasion resisting and cementing properties and for all investigations as to the suitability of materials for the surfacing or metalling of roads. The hydraulic laboratory is now being installed as a part of the Henry R. Worthington Laboratory. It affords opportunity for complete practical operations in measuring with remarkable accuracy the discharge through weirs and other orifices, as well as the flow through open channels of various sections and closed pipes, and the friction and other resistances in pipes and open channels. It may also be used for the gauging of meters and for general hydraulic investigations of wide range requiring great accuracy. The testing of hydraulic motors and all laboratory work in connection with steam-engines, boilers, locomotives and pumps, are performed in the laboratories of the Department of Mechanical Engineering. The laboratory operations corresponding to the lecture work in other departments is done in the laboratories of those departments. The Department of Civil Engineering performs all its testing of materials in connection with the subjects of electricity and resistance of materials in the testing laboratory of the Department of Mechanical Engineering.

Mechanical Engineering.—Like the other engineering courses, the first two years of the four years' course in Mechanical Engineering are devoted rather to the scientific and mathematical ground-work of professional instruction, while the last two years are devoted to the purely professional training. The purposes of the course are:

"(1) To train men to become competent engineers in matters relating to the generation, transmission, and utilization of power. (2) To train

men to become engineers or managers of manufacturing enterprises, or to be teachers of science and engineering. (3) To furnish such a general scientific and technical training as to fit men for service on the business side of industrial enterprises. (4) To afford such a thorough analytical training in the principles of pure and applied science, that graduates from these courses may be able, with minds broadly trained, to meet any demands likely to be made by professional life.

"Distinctly professional work characterizes the last two years of the course. The principles of analytical mechanics and the resistance of materials form the basis of such engineering work. Special stress is laid upon design of structures and machinery, such as an engineer is called upon to construct in his practice, and data for such design are obtained by the student himself from tests upon the properties of materials in a testing laboratory, and from tests of efficiency of motors and engines and transmissive machinery in the mechanical, hydraulic, and steam and motive power engineering laboratories of the school."

A marked feature of the course in this department is the provision of alternatives for the fourth-year work. The first three years are identical for all students in the department, but the fourth year may be taken under (A) the dynamic alternative, (B) the electrical alternative, or (C) the mining alternative.

Course A is adapted to the designing, installation and management of power plants and manufacturing enterprises. Course B is adapted to the needs of those mechanical engineers whose practice has to do more or less with electrical engineering. Course C affords educational training for those mechanical engineers whose professional work is found, to some extent, in the field of mining engineering. The satisfactory completion of the four-years' course of study, with either of these three alternatives, leads to the professional degree of mechanical engineer. University students will find in this department opportunities for pursuing engineering studies which may be offered in connection with other work for the degrees of master of arts and doctor of philosophy.

The equipment of this department consists of workshops, a testing laboratory, a steam-engine and motive-power laboratory, a locomotive laboratory and the hy-

draulic-motors laboratory, besides museums of models and specimens. The work-shops are located in the Macy Manual Arts Building of Teachers College. They are completely fitted with machines, tools and appliances for all classes of wood working, forging, moulding, planing, lathe- and hand-work of metals. The testing laboratory at present contains several testing machines of large capacity, besides smaller machines and apparatus of all descriptions. The steam laboratory contains a 150 horse power triple-expansion steam-engine, given through Mr. William W. Allis, of Milwaukee, as a memorial of the late Edward P. Allis. This engine is so fitted that it can be run as a three-stage air compressor. The laboratory also contains a two-stage compound air compressor, presented by the Ingersoll-Sergeant Drill Co. There are other large pieces of machinery including a Wheeler surface condenser of 40 horse power capacity, with weighing tanks and scales presented by the designer, and a De Laval steam turbine capable of running at 25,000 revolutions per minute. The equipment likewise includes all the transmission plants, shafting and other similar appliances required for a complete and efficient laboratory plant. A 1,600 horse-power Vauclain compound locomotive, presented by the Baldwin Locomotive Works, is found in the locomotive laboratory. It is mounted and fitted so as to be available for the widest range of experimental uses. A standard trolley car, presented by the J. G. Brill Company, is also mounted to permit operation and tests. The hydraulic-motors laboratory is a part of the Henry R. Worthington hydraulic laboratory presented by Mr. Charles C. Worthington. It contains duplex triple expansion high- and low-pressure pumps, the former designed to operate against a pressure of 5,000 lbs. per square inch. This laboratory is also fitted with an eight-inch venturi meter, and full facilities for testing hydraulic turbines and other motors. Besides these laboratories, the power plants

of the University are available for testing and investigation. The laboratories of other departments are used by the students of this department in the subjects requiring them.

Electrical Engineering. — The four-years' course in Electrical Engineering has been organized in such a manner as to meet the demands of the rapidly extending field of electrical engineering with the greatest efficiency. In general terms, its purpose is training in the generation, transmission and application of electrical power.

"It is designed for the education of professional electrical engineers who intend to devote their lives to the practice of this profession, either as teachers in colleges and scientific schools, or as engineers, managers, or experts in manufacturing or other industrial enterprises.

"The course of instruction includes not only all important branches of theoretical and applied electricity, but also the other collateral sciences, which have been found by experience to be required by the electrical engineer, such as mathematics, physics, chemistry, drawing, analytical mechanics, mechanical engineering, including a thorough course in steam and other engines, as well as transmissive machinery and shopwork. General engineering, including construction in masonry, iron, steel and wood, also forms part of the course."

This department, in common with the other engineering departments, enjoys marked advantages from close proximity to great engineering works in the city of New York and vicinity, which exhibit the most advanced practice in all the fields of engineering work. These exceptional facilities enable students to acquire for the duties of professional life a preparation of unusual breadth and excellence. Upon the completion of this course of study, the professional degree of electrical engineer is conferred.

The equipment of the department is most effective and admirably adapted to the course of study. The storage battery and photometer rooms contain a battery of 70 cells and all the necessary apparatus for calibrating arc and incandescent lamps. The larger of the two machine laboratories contains the direct-current machinery, a 50 horse-power high-speed steam-engine and requisite shafting with other appliances. The smaller laboratory contains the

TESTING LABORATORY.

TESTING LABORATORY.

alternating current apparatus. The various dynamos include 115 and 500 volt constant potential generators, types of stationary and railway motors, motor dynamos, machine and hand tools, complete sets of ampere and volt meters and a full equipment of other appliances. In the instrumental laboratory and the research room are placed galvanometers, ampere balances, apparatus for measuring inductance, magnetic permeability, hysteresis and leakage, and other apparatus for all classes of electrical work. The museum contains an extensive collection of models, materials and apparatus relating to electrical engineering. In addition to the department laboratories, the supply of electric power from the central power plant of the University is available for experimental and other work. The laboratories of other departments are also used.

The university courses in this department for the degrees of master of arts and doctor of philosophy are: dynamo and motor practice, electric lighting and electrical laboratory (minor subject); electric power, management of electric plants, electrical laboratory, electrical distribution (minor subject); electrical engineering laboratory with mechanics; special problems and original investigations in advanced electrical engineering (major subject).

School of Mines.—Although the courses in Mining Engineering and Metallurgy are quite separate and independent in their organization, leading to the professional degrees of engineer of mines in the one case and metallurgical engineer in the other, they have so many subjects in common throughout the entire four years that they may properly be considered in one section.

The course in Mining Engineering is intended primarily to train men to undertake the development of mineral properties, and to operate mines and metallurgical works.

"In the fourth year students of mining have the option of omitting certain courses in mechanical engineering, and taking in their place certain courses in geology. This geological option is intended for stu-

dents who expect to devote themselves to field work in economic geology, or whose professional work is likely to be in new and less developed mining regions, and for other cases in which geological training may be of prime importance."

The course in Metallurgical Engineering is intended primarily to train men for positions in metallurgical works.

"This course differs from that in mining engineering in giving more attention to metallurgy, chemistry and electrical engineering, and less to mining and mechanical engineering. The subjects most emphasized are metallurgy, chemistry, engineering and mineralogy. Metallurgy requires thorough instruction in inorganic and applied chemistry, qualitative and quantitative analysis and assaying."

Both these courses include a wide range of studies and afford excellent general scientific training for such young men as are seeking a broad scientific education. Graduate and university students may pursue mining and metallurgical studies for the degrees of master of arts and doctor of philosophy or for special study and investigation.

Besides the metallurgical museums and extensive metallurgical collections, these departments possess elaborate mining and metallurgical laboratories. The museums exhibit diagrams and photographs of coal and metal mines, furnaces and appliances, as well as many accurately constructed models showing details of mines, deep-boring apparatus, dressing machines, metallurgical apparatus, Bessemer converters and roll trains, with other tools, devices and appliances employed in mining and metallurgical operations. The mining laboratories afford full opportunities for the completion of mechanical assays, and for working tests to the amount of a ton or more of ore. The laboratory of dressing machinery includes full-sized machines of standard types arranged in working condition, so that the operations to which they apply may be executed continuously and under actual conditions of use. A stamp mill and other appliances will be installed in the laboratory for milling gold and silver ores.

The metallurgical plant includes an analytical laboratory equipped for ordinary analytical work, and particularly for

special investigations. The metallurgical laboratory is so fitted and equipped with furnaces for roasting, heating and melting that processes may readily be carried out on illustrative scale. There are special furnaces for high-temperature investigations and a large furnace heated by electricity. These principal features are generously supplemented by calorimeters, pyrometers, apparatus for analysis of furnace gases, photo-micrographic outfit and other appliances employed in metallurgical operations.

The laboratories and laboratory facilities of other departments are used by the mining and metallurgy students taking courses in those departments.

The university courses in the Department of Metallurgy for the degrees of master of arts and doctor of philosophy are: advanced course in calorimetry; advanced course in pyrometry; microscopic study of iron, steel and other metals; the heat treatment of steel and other metals; the formation-points, melting-points and specific heat of slags; the influences of strain upon the properties of metals; the chemistry of roasting processes; the chemistry of iron blast furnaces; the chemistry of basic dephosphorizing processes; search for new and useful alloys; fire-brick and other refractory materials; electrolytic refining and depositing processes; and wet processes for extracting gold, silver and copper.

WM. H. BURR

THE YEAR IN ATHLETICS

IN attempting to review the development in athletics at Columbia during the past year, the starting point must be the opening of the new gymnasium. In his article on "The Gymnasium and its Relation to the University," in the COLUMBIA UNIVERSITY BULLETIN for December, 1897, Dr. Savage compared our gymnasium with those of Cornell, Chicago, Harvard, Johns Hopkins, McGill, Michigan,

Princeton and Yale. By a tabulated comparison he was able to show that our gymnasium floor is larger than any other by 7926 square feet, that our swimming tank is the largest by 2500 square feet, and that our running track requires three laps less to the mile than that of any other college. The equipment is, moreover, of the same high character. The main floor contains every kind of apparatus that can be of constant value, and it is so arranged that there is in the centre a free space 100 feet wide, where class and mass work are carried on. Hand-ball courts are provided for officers and students, and special rooms are set apart for rowing, fencing and boxing. In short, this centre of all athletic interests seems almost perfectly designed to maintain within the University a healthy enthusiasm for physical development.

Perhaps the most radical innovation connected with the opening of the Gymnasium last autumn, was the announcement in the catalogue that all students, other than those of the College of Physicians and Surgeons, must pay annually a gymnasium fee of seven dollars. The purpose of this requirement was twofold: first, to help defray the expenses of the Gymnasium; and, second, to arouse a more general use of its facilities, by making all the students feel that here was a privilege for which they were paying and which they could not afford to neglect. How well the first purpose has been attained can only be known when the Treasurer's report for the current year is published. That the second has been attained is shown most conclusively by the fact that one sees in the Gymnasium every day men who would invariably say that they could not afford the time, if they did not feel that failure to attend meant a waste of money. Every student thus comes to feel that here is a part of the University which is distinctly for him—a place where there is complete relaxation from the vicissitudes of the class-rooms; and so it is here that the men make their appointments and, during

the winter months, talk over the athletic prospects and plans and other student activities. About this building is growing up a new college spirit, which will in the future make Columbia something more than a mere teaching organism. The average daily attendance in the Gymnasium during the past winter was about 175 and that in the hand-ball courts about 60.

It is in the two lower classes, however, that the Gymnasium has had the most effect. When it was announced last summer that Freshmen and Sophomores would thereafter be required to take work in gymnastics, all Columbia men wondered what the result would be—whether this experiment, so new to Columbia, would prove a success or not. Now that the year has closed, it may be interesting to know what the courses were and exactly what their effect has been. In the first place, the courses are designed to accomplish in the two years two main results : they should teach the men, first, to use the various appliances so as to develop their bodies and preserve their health and, second, to apply practically the strength thus gained. During this year the men have been given exercises on all the many contrivances which the Gymnasium contains for the development of the body. The practical element has been the teaching of the art of self defense. Lessons have been given in swimming, boxing, wrestling and the use of the single stick or cane.

The large number in these classes and the limited amount of time available has, of course, made individual instruction to all quite impossible ; and hence to the classes, as such, only the rudiments have been shown. But the men have been started ; and, by practice with their classmates under the guidance of the instructor, they can, if they have the will, become so proficient as to be able to take care of themselves in almost any emergency. The only criticism that has been heard in regard to the work has been that there existed a bit too much laxity in compelling attend-

ance. If any benefit is to be derived from these courses, it is necessary that regular attendance be required with the same strictness as in other courses of the University. Especially is this so with the lower classes, where the men have yet to learn that in order to get any good out of any course punctual attendance is absolutely necessary. But it is believed that the cause of this leniency may be traced to the fact that this has been a new venture and to a fear lest the courses become mere irksome drudgery. When the students appreciate the benefits of the work, this deficiency will be cured by itself.

Besides the mere physical gain of the courses, there are certain collateral benefits. Thus, a "morale" is developed among the members of these two classes, through coming together in athletic work and getting to know one another in a way that would be impossible from the mere intercourse of the class room and casual meeting on the campus. Again, men who would otherwise be too diffident to try for class or 'Varsity teams become aware of the fact that they are not much behind their classmates in the requirements necessary to make an athlete and, being thus encouraged to try in the competitions, they furnish more and better material for all the teams in the University.

In order to get a tangible idea of the effect which the Gymnasium has had on the general strength of the students, a few averages have been made from the records kept by Dr. Savage. These records are arrived at according to methods adopted by the College Gymnasium Directors' Association, by tests as to the strength of (1) the back, (2) the legs, (3) the right forearm, (4) the left fore arm, (5) the triceps and chest, (6) the biceps and back, and (7) the capacity and strength of the lungs. These tests are taken by all the Freshmen and Sophomores, by all the members of the various athletic teams and by all others who wish. By looking at the first 100 tests which were taken between October 5th and 13th, within two weeks of

the opening of the Gymnasium, it is found that the average was 502 kilograms; while in the 100 tests taken between January 20th and March 29th, after the men had been using the Gymnasium for from four to six months, the average was found to be 611.7 kilograms, an increase of 109.7 kilograms or 241.34 lbs. Taking from the Freshmen and Sophomore classes twenty-five men who have taken two tests, it is found that the maximum improvement was 326 kilograms or 717.2 lbs; the minimum, 20 kilograms or 44 lbs; and the average, 162.2 kilograms or 356.84 lbs. It may be asserted that the tests are not fair, because so much depends on knack; but what does that mean except that the men have learned how to use their strength? Surely, one of the most important features of gymnastic work is that it teaches one how to use one's strength. Probably these results are as accurate as any that can be attained by mechanical contrivances; and, even when they are liberally discounted, they prove unmistakably that the work has been of immense benefit.

Another innovation, in connection with the opening of the Gymnasium, was the organization of a Faculty Committee on Athletics. Although Columbia has generally been pretty free from any taint of professionalism in her athletics, there was a slight tendency in certain branches to induce "stars" to come to the University for athletics alone. In order to check this tendency, a committee of the Faculty was appointed to draw up a set of rules to govern the participation of students in athletics. Briefly, these require that the student must be an amateur, attending regularly the exercises of his class, if a candidate for a degree; or, if a special student, of courses amounting to not less than ten hours a week. He must also maintain a satisfactory standing in his class, and must pass a physical examination satisfactory to the Director of the Gymnasium. In addition, all schedules must be submitted to the committee and approved by it, and all outstanding

indebtedness must be paid off before any team may compete in any public athletic contest.

Shortly after this plan had been adopted, President Andrews of Brown University invited the various universities to send delegates to Providence, for the purpose of formulating a uniform set of rules to govern all intercollegiate athletics. The rules there adopted were, with one exception, exactly like those already proposed by our committee. This one exception was that students from other colleges, who had represented those institutions in any intercollegiate contest, should not be eligible to represent Columbia until they had been in residence for at least one academic year. While this rule was admittedly unsuited to the conditions existing at Columbia, it was adopted by our committee, in order to fall in line with the other colleges and thus to remove any cause for suspicion that Columbia offers any inducement to "stars" from smaller colleges. This rule seems to be the one weak spot in the regulations adopted. At a university like Columbia at least fifty per cent. of the students have begun their education at other colleges; and, if they are athletes, the chances are that they have competed for these colleges. The popular means of inducing men to change their universities by offering scholarships is impossible at Columbia, for here these are granted only on the basis of merit, proved by competition. Further, by the other rules adopted, it would be impossible for the associations to pay the men's tuition. Thus, we have the following state of things: the evil which the rule seeks to remedy does not and cannot exist, yet the rule by its sweeping restriction debars, for one year at least, one-half of the men in the University available for 'Varsity athletic teams.

The committee which formed the Columbia rules was made permanent, and upon it has fallen the duty of seeing to their enforcement. Its policy has been to interfere as little as possible with the students and their man-

SWIMMING POOL.

agement of athletics, and thus far there has been no friction between it and the student body. The existence of this committee has been a moral force that has kept all the teams within bounds. Positive action by the committee has been deemed necessary in only one case. During the winter one of the teams acted in opposition to the rules; and, when notified of their error, it ignored the warning—with the result that three men of the team were immediately punished, by being debarred from participation in any athletics for one year. This case has served most admirably as a salutary warning to the other teams.

Probably the most particular and immediate benefit of the Gymnasium has been to the athletic teams. By the winter work in the Gymnasium, the candidates for the various teams have been enabled to lay a foundation for the spring competitions; and, when the teams were called out, a chance was afforded for telling training before the weather permitted outdoor work. The crew had the benefit of the rowing machines, a special locker room and the tank; the baseball and lacrosse teams effectively used the cage; and the track men have had the advantage of the nine-and-a-half-lap running track.

The year has brought to the surface, in different ways, the defects and the improvements of the different teams. The baseball team, which for a new team did so well last year, has profited by its experience, making the most noted advancement in its system of training and practice. Last year the team was made up of stars, who played well by themselves but lacked the team spirit necessary for a winning nine. This year the principle of working up a team, and not a collection of individuals, has been strictly adhered to by Dr. Cotter, the coach; and all men who would not or could not come out every afternoon to work with the team were soon shown that their services could be dispensed with. As a consequence, the team includes more Columbia undergraduates, with fewer "stars," and has played more as a unit and made a better showing.

Rowing immediately jumped into the most prominent place in the University's athletics in 1895, when the crew won at Poughkeepsie; but during the past year an unfortunate combination of circumstances has tended to make the student body lose interest in this sport. In the first place, when the boat club was started two years ago, it assumed absolute control of all rowing matters; and, since the student's part has been simply to subscribe money, —as the majority of the members of the boat club are graduates,—rowing has more or less fallen out of favor with the undergraduates. Again, the annual races are held at a time and a place which have made it impossible for the majority of students to see them, and the revival of other first-class intercollegiate athletics has transferred the students' interest from rowing to these, simply because the practice and the games are held where the students can easily see them and take an interest in the daily improvement of the teams. Evidently something must be done to bring the crew back into proper relations with the student, if rowing is to continue to have their hearty support. Otherwise, this year's prospects are brighter than ever since '95, principally because Dr. Walter B. Peet is again in exclusive charge and everybody feels confident that he can instill the principles of rowing into this year's crew as he did into that of 1895. That this confidence is well placed, was shown on May 13th, when the crew won the race with the Naval Cadets at Annapolis.

The improvement in the track team has been most evident in the change of the methods of management. By great efforts and perseverance on the part of its manager, the old debt, which had been accumulating for the past few years, has been paid, so that this year's team went into training with this old score wiped out. The effect of the past year's poor management has been seen this year principally in the small number of candidates for the team.

Through the efforts of several Columbia graduates, a

separate association was formed last winter to govern intercollegiate cycle racing, bearing the same relation to cycling that the I. C. A. A. A. A. bears to track athletics. The annual meet will be held on the third of this month, and the Columbia team hopes once more to bring back the championship banner. To do it this year will be a much harder task than formerly, for the four crack riders of previous teams have left college. But these men were so plainly out of the class of all college riders that their loss merely puts the various colleges on a more even footing, and makes it necessary to work harder to achieve victory. This responsibility is apparently appreciated by the team, which, despite these losses, won easily from the Cornell Cycle Team at the dual meet of May 13th.

The fencing team also lost greatly this year by the graduation of some of its best men and, as a consequence, was rather easily beaten by Harvard in the annual tournament by a score of 8 to 2.

Lacrosse, which was revived last year for the first time in several years, has continued its existence this year, but the team has not made much advancement over its last year's work. However, those interested in this most graceful game have established the game at Columbia, and after the experience gained last year they should be successful in the games played in the intercollegiate league.

The golf team, while it did not win the intercollegiate tournament, made a most creditable showing. Two of our men qualified for the individual championship and one made the lowest score for the first day's play. The club began playing again during the spring, and in a match with the Englewood Golf Club won by a score of 18 to 2.

The hockey team lost all of its games in the intercollegiate league, but the scores were close and, considering the strong teams against which it played, the team did well.

The gun club competed against Princeton twice, being beaten at Princeton by one bird but at Williamsbridge by a much larger score.

The tennis club has continued the successful career which it began last year. The four courts built in the field opposite the Library have during the autumn and spring been in constant use by its sixty or seventy members. Two very successful college tournaments have been held, besides the Columbia section of the interscholastic tournament. The club hopes to develop two men to send to the intercollegiate tennis tournament next autumn.

The gymnasium team, which made its appearance in Columbia athletics this year for the first time, was able after two and a half months' training to make a very creditable showing at the exhibition, held in our gymnasium in conjunction with teams from Yale and Princeton. At the intercollegiate contest held at New York University on March 24th, in which seventeen colleges were represented, the team was handicapped by the loss, through accidents, of three of its best gymnasts, but in spite of this disadvantage it secured third place.

The past year has seen realized a hope which has long been harbored by all Columbia men: we are, next autumn, to have a 'Varsity football team. During the winter a Football Association was formed, and since then the preliminary plans have been put into definite shape, so that a football team is now an assured fact. George Foster Sanford, who played guard on the Yale team under captain McClung and was so successful in coaching the Yale team in '97, has been engaged as coach, and began his work with the men during the first week in April. For three weeks the men came out daily for spring practice, and were taught the rudiments of the game. Arrangements have been made to take the candidates to Quogue, Long Island, for a few weeks' preliminary practice next September. When college opens, they will be brought down to quarters on Washington Heights, overlooking Manhattan Field, and at the latter place all the home games will be played. A schedule of eleven games has been arranged,

including games in New York with Princeton, Brown, Amherst, Cornell (on Election Day), Dartmouth and the Carlisle Indians (on Thanksgiving Day). With these plans and the amount of money already assured, all that is necessary to make football a permanent part of our athletics is that the team shall win a few games.

All who have been connected with this forward movement in athletics have felt most forcibly certain limitations which have bounded all their efforts. Most of these may be traced to two main causes: first, the deplorable system of management which generally prevails in all the teams; and second, the lack of athletic grounds near the College.

With a view to obviating the first of these evils, it has been proposed to bring all the organizations together under one athletic organization and a small graduate advisory committee. All the money would then be handled by a general athletic treasurer, who would be a graduate and would receive a regular salary. This is substantially the system which has worked so successfully at Yale, Harvard, Princeton and the University of Pennsylvania. At present, all the associations work for themselves and there exists a most evident lack of that centralizing force which should make every association in all its actions thoughtful, not only of its own individual success, but of the general good of Columbia. This has been attempted by the Athletic Union, but the very nature of this body makes such a result impossible. Each association is represented in the Union by a number of delegates, and the contentions which occur tend to widen the breach between the various managements. To secure the needed centralization, the highest power in the athletic management must be vested in a small body, capable of harmonizing all the different interests from a purely unbiased Columbia standpoint.

Then there is the old skeleton in Columbia's closet, the financial problem. Up to last year there was probably never an athletic team which ended the season with any

substantial balance to its credit. This, to be sure, was due principally to the fact that for some years past there have been no football or baseball teams, which are the only teams likely to have any considerable income. Most of the other teams have either ended the year in debt or have relied on some few beneficent alumni for subscriptions enough to make up their debts.

The athletic teams of the University now require a yearly expenditure of about $19,000. This sum is handled by about ten undergraduate managers, who are usually totally lacking in business experience and necessarily waste a good deal. By the plan proposed, all the money subscribed or otherwise raised would be put in a common fund, in the hands of the graduate advisory committee, and each manager would be required to furnish an itemized budget of the money required for the ensuing season. This sum would be allowed after the athletic treasurer and advisory committee had passed upon it, and the manager could contract bills only to the amount of the allowance given him. In criticism of the plan, it is said that, while it provides very carefully for the expenditure of the money, no suggestions are offered for getting the money to spend. In answer to this comes the suggestion that the aim of the plan is to provide a means of spending the money so that there shall be less waste, which is equivalent to an increase of income. Money will doubtless have to be raised, as in the past, by subscription, until the football and baseball teams, the junior balls and the other entertainments can make enough profits to meet the needs. But the fact still remains that the most necessary step toward ensuring liberal subscriptions consists in perfecting such an organization as will satisfy subscribers that the money will be well spent.

The second and most important obstacle that prevents Columbia from attaining a high position in intercollegiate athletics is still without a remedy. To any one who stands on the Library steps on a spring afternoon and looks over

at the "Field" across the way, the absolute need of a real athletic grounds is apparent. The heroic attempts that are there being made to train the various teams are almost pitiful. The football squad is lined up on the side of a hill; the track team is running on a clay track which, in smoothness, bears a close resemblance to a potato patch; while the baseball fielders dodge balls which gracefully carom about among the branches of the grove of trees that serves as an outfield. Despite all these drawbacks, however, men are thankful that they are not obliged to travel daily up to Williamsbridge. By the leasing of Manhattan Field for three months next autumn, the Football Association has made a move toward getting athletic grounds somewhat nearer the college buildings. This place could be leased for ten years at a yearly rent of $15,000; but it would be subject to a prior lease to the Horse Show Association, which intends to use the grounds every year for two weeks in May. This would break in upon the most busy time of the athletic year and would thus subject all the teams to much inconvenience. Besides, 155th street and Eighth Avenue is so far from the College buildings as to discourage men from going there to train or to see others train. The ideal place for an athletic field is in the lot opposite the Library. Here is a plot of ground two blocks long and one wide, where a magnificent track and field can be laid out and Columbia athletics would receive a boom such as has never before been experienced. Of course, everyone knows what an expense the University has been under for the last two years, and all realize that it would be next to impossible for the authorities to buy the place. But why not start a stock company of Columbia graduates? If such a body owned the field, the land would be a security for the principal and the interest would come from the gate receipts, not alone of Columbia games but of all other college games held in New York City.

Through the kindness of Mr. Edwin Gould we have a

boat house; through the thoughtfulness of the trustees we have a gymnasium; but it still remains for some benefactor to supply that need, more pressing than any other, of an athletic field near the University. Upon the control of such a field depends the future success or failure of Columbia in athletics.

WILLIAM BITTLE SYMMES, JR.

WHAT THE COLLEGE BUILDINGS SHOULD BE

TO THE EDITORS OF THE UNIVERSITY QUARTERLY.

Gentlemen: In compliance with your polite invitation, I send you a brief note upon the development of the south end of the University grounds.

I presume it is known to you, as it is to all who have a lively interest in College matters, that my disappointment is so great as to amount to a personal grief that the College—King's College, the alma mater of many of the builders of this republic; Columbia College, the mother of eminent benefactors of their time—should be so shabbily housed. Amid the splendid edifices that adorn this site and are an ornament to the city, the small and relatively mean building, euphemistically called "College Hall," is a reproach. It puts the whole business of the College at a disadvantage. It belittles the importance of undergraduate work, and gives to hundreds of visitors an impression that the College has a very inferior and little esteemed part to play in the great educational movement that is in progress here.

The south part of the grounds affords an admirable opportunity to remedy the existing disabilities and to enhance the dignity, beauty and significance of all parts of the University. My eager hope—I would be glad to say my confident expectation—is, that the brick building on

Amsterdam Avenue and the one now occupied by the Superintendent of Buildings and Grounds on Broadway and 116th Street will, in the near future, be replaced by two fine college buildings—the one on Amsterdam Avenue to be called, if you please, College Hall East, and the one on Broadway, College Hall West. They should be built of the same material as the Library, or of similar material; while not out of harmony with the general scheme of architecture that prevails here, their style should be lighter and more ornate than that of the other buildings; they should provide, first, for all the exercises that pertain especially to the work of the College; they should have rooms for the literary societies and for the offices of all those student enterprises that have the approval of the authorities; there should be rooms for class meetings, and an assembly hall in which the students of the College could hold all general meetings that may be properly authorized: in short, the whole life of the College should be centered in those buildings. The court between the two, which is now called South Court should be called College Court. Should this be done, and the principal entrance to the University grounds be between these College Halls and through the College Court, a significance would be given to the place which it now lacks. It would indicate, what is the truth, that the proper entrance to a university is by and through a college—not necessarily Columbia College (though that would be preferable), but through some college. I believe that, if this were done, not only would the College be put in its proper position, but the whole site would be beautified as it could be in no other way, and an educational significance added to it which could not otherwise be so well given.

Respectfully,

J. H. Van Amringe

College Hall, April 26, 1899

EDITORIALS

Professor Moore as a Diplomat

In the article on "Columbia Alumni in Diplomacy," which we print in this number of the QUARTERLY, the author is freed by the limitations of his theme from the necessity, which to so modest a man would have been peculiarly distasteful, of recording his own services. Professor Moore is not a Columbia alumnus; but, fortunately for us, he is and has been for eight years a part of Columbia, and the University many justly claim at least the reflected credit of his diplomatic career.

John Bassett Moore entered the state department in 1885 in good democratic fashion, obtaining his first appointment, that of clerk, on competitive public examination. In the following year he was promoted to the position of third assistant secretary, which he held until, in 1891, he became professor of international law in the Columbia faculty of political science. During this first period of service at Washington he prepared two important reports, on *Extra-territorial Crime* and on *Extradition*, which were published by the government in 1887 and in 1890. In 1891 he published a systematic work on *Extradition and Interstate Rendition*, which has long been accepted as authoritative. After assuming his professorship at Columbia, he became an editor of the *Political Science Quarterly* and published in its pages, among other valuable articles, "Asylum in Legations and Consulates and in Vessels" (1892), "The Late Chilian Controversy" (1893), and "The Monroe Doctrine" (1896). During these years, however, his chief labors, apart from his duties as instructor, were devoted to the subject of international arbitration; and during the present year the government has given to the world the fruits of these studies, in the monumental *History and Digest of International Arbitrations*.

Professor Moore's former services at Washington, and his growing reputation as an authority on international law, led the state department to avail itself frequently of his counsel, particularly during the difficulties which preceded the recent war with Spain; and when, upon Mr. Sherman's retirement, the President offered the secretaryship of state to Mr. Day, the latter

made it a condition of his acceptance that Professor Moore should be appointed assistant secretary. Upon a personal appeal from President McKinley, President Low consented to lend Professor Moore to the government; and through the summer Professor Moore discharged the anxious and responsible duties of first secretary, acting on several occasions, in Mr. Day's absence, as head of the department. In September he was appointed secretary and counsel to the American Peace Commission, and he participated in the labors of that body at Paris during the autumn.

Few of the Columbia alumni whose services Professor Moore chronicles have discharged more important diplomatic duties; and it was a happy inspiration of the Columbia Trustees that has linked his name with one of Columbia's greatest diplomatists, as the first incumbent of the Hamilton Fish professorship.

The Library and the University.

The acceptance by Dr. James K. Canfield of his election as Librarian of Columbia University, is an event of much more than usual significance. It is a tacit tribute at once to the prestige of Columbia University and to the position held by the modern library in the work of education, that a man who has gained national prominence and reputation as an educational administrator, and who has enjoyed the honor and the influence attached to two university presidencies, should regard election to the University librarianship as a promotion. It is probably within the truth to say that the possible effectiveness of an efficiently organized and administered library as a factor in the life and work of a university is by no means fully recognized or appreciated. In a hundred ways, yet undiscovered or known only in part, it may forward the university's ideas and reinforce the university's methods. Moreover, the Columbia University Library can render a pronounced service to the schools of New York and to those who seek New York for study and research. In working out a policy of fullest coöperation with the New York Public Library, whose new home is now happily under construction, there is opportunity for public service which will lend lustre and distinction not only to the University but to the metropolitan city as well. That Dr.

Canfield will make these policies his own, and that his trained ability, his administrative skill, and his vigorous strength will all be bent to their accomplishment, are beyond question.

Commencement and the Alumni

Within a few months Dean Van Amringe will have completed forty years in the service of the College, having been appointed tutor in 1860, and his election to the office of Acting President is a timely recognition of his ardent, unswerving and unselfish devotion to the College during these many years. Not only to him, but to the great body of alumni who have sat under his teaching and who have learned to love the man and his work, does this preferment afford deep gratification; and many more of the latter than the Commencement Hall will hold would derive the keenest pleasure from seeing him in the place of honor at Commencement. It is unfortunate that the seating capacity of the gymnasium renders it impossible to invite the alumni generally to the morning exercises, but the anniversary meeting in the afternoon will undoubtedly bring together such an assemblage of alumni, to do honor both to the Acting President and to the distinguished speaker, as Columbia has not often had before. The Alumni Council have already issued a programme for Commencement week, beginning with an exhibition in the gymnasium and swimming pool on Saturday afternoon, June 3, and culminating with alumni luncheons and the general meeting on the afternoon of June 7. The arrangements of last year have been greatly improved, by permitting more time for association meetings and class reunions and by providing several luncheons instead of one. The College Association will give its luncheon in College Hall, the alumni of the schools of science will hold theirs in the Engineering Building and the alumni of the other schools will be served in West Hall. The overcrowding of last year will thus be avoided, and it will be possible to accommodate comfortably a much larger number. We are most fortunate this year in having as our orator one who not only commands our respect as governor of the state of New York, but who is one of us as college men and who has exhibited so many of the ideal qualities of a college graduate. Every indication points to a larger

attendance and to a still greater interest than that of last year. The practice then so successfully inaugurated of making Commencement the rallying point of the year for the alumni is one which must inevitably gain a stronger hold, as usage renders it more familiar and the continually increasing number of alumni returning to render their fealty to Alma Mater gives it richer associations.

The reports of the March and May meetings of the Trustees, which we print in their usual place, present a list of gifts to the University which in number and scope is unprecedented:

Gifts and Endowments

$10,000 from the estate of Charles Bathgate Beck, '77, for the endowment of a scholarship in the College and a prize in real estate law; $30,000 from Alexander Moncrief Proudfit, '92, for the endowment of two fellowships (the Alexander Moncrief Proudfit Fellowship—so named in memory of the testator's father, a graduate of the class of 1792—for the encouragement of advanced study in literature, and the Maria McLean Proudfit Fellowship, for the encouragement of advanced study in medicine); $100,000 for the endowment of the Waring Municipal Fund; $75,000 from President Low, to reimburse the corporation for interest advanced on moneys borrowed for the construction of the library and to be held as a guarantee fund to meet deficits in current income; $11,750 for the endowment of the Anton Seidl Fellowship in Music; $10,000 from Miss Catharine Wolfe Bruce, for the prosecution of astronomical work; $10,000 for the endowment of the George William Curtis Fellowship in political science; $10,000 from an anonymous giver, for the purchase of books; $10,000 from Isaac Michael Dyckman, for the encouragement of biological research; $1,000 from ex-Governor Flower, available for current expenses; and in addition gifts of collections and apparatus to the departments of zoölogy and mechanical engineering.

Valuable as are these acquisitions to the University in a pecuniary sense, they are still more to be prized as a reflex of public sentiment and as an indication of the growing strength of the regard of the community as well as of its alumni. That the University should have been selected by organizations and indi-

viduals having no personal or official relations with it, as the means of perpetuating such names as Waring, Curtis and Seidl, is in itself an honor not easily overestimated, and the donors have doubly enriched the University by associating with it names so richly deserving to be perpetuated. Such names are in themselves an inspiration both to the University and to the students, and the men who have been thus commemorated will continue to exercise an energizing and uplifting influence.

The Finances of the University.

The refunding of a large portion of the University's liabilities at three per cent. has not only relieved the treasury of a considerable burden, but seems to demonstrate that as a borrower the University enjoys a credit hardly second to that of the United States. To any who have experienced doubts as to the financial responsibility of the University this circumstance should afford immediate relief, for the conclusion is unavoidable that, whatever may be the liabilities of the corporation, its assets are far in excess. What is perhaps even more important is the fact that, while the University now has a large debt (though it had none six years ago), it is equally true that during the same period the University has acquired a new site and buildings which are worth at least double the amount of the debt. This is equivalent to saying that already nearly half the cost of the new site and buildings has been met and that, if the next ten years are as prolific in gifts and endowments as the last, the University's debt will be entirely wiped out by the time the obligation falls due.

Two fundamental questions of policy were clearly determined by the Trustees upon purchasing the new site. One was that it must be developed to its full capacity and to the best advantage for immediate educational needs, with due provision for future development, at whatever cost; and the other was that the present educational administration must not be allowed to suffer in any way. Both of these lines of policy have been strictly adhered to, with the result that we have a site and buildings perfectly adapted for our needs at a cost very slightly exceeding the original estimates, that the educational work has been maintained at its full efficiency and that we have a debt. The last

result may almost be regarded as the natural consequence of the two former; but it is perfectly consistent with the theory that buildings which are to be enjoyed by many generations of students should be paid for, in part at least, by those who come after us. The experience of the past few years, however, has certainly justified the confidence of the Trustees that, in their endeavors to create a University worthy of a great city, they would receive the liberal support of the people of that city. The gifts which the University has recently received, as well as the refunding operation, afford encouragement for the belief that before many years elapse the University will not only be relieved of its present obligations, but will be enabled so to enlarge its facilities for the best possible work as still further to realize the ideal of a city university.

Commercial Education

Special significance is to be attached to the action of the Trustees, at their May meeting, in agreeing to establish a collegiate course in commerce, as soon as the necessary arrangements can be made. In carrying out this plan, the University will have the coöperation of the Chamber of Commerce, which has endorsed the detailed proposal for such a course made by its special committee on commercial education.

That committee, after a thorough investigation of the questions involved and a full consideration of the results attained by schools of commerce in Leipsic, Paris, London and elsewhere, presented two alternative plans for a four years' course of fifteen hours a week—differing chiefly in the proportion of time alloted to distinctively commercial subjects. These agree in devoting a considerable amount of time—though in somewhat different measure—to the modern languages, rhetoric, history and economics; but one plan requires special attention to the technical processes of production. Both make use, so far as possible, of the courses already offered in the University, but they supplement these with special courses on commercial geography, commercial history, commercial law and accounting, aiming to combine a liberal general education with special training for a commercial career.

It is proposed that the course shall be administered by the College Faculty, shall be open to graduates of high schools, shall

lead to a certificate but not a degree, and shall be supplemented by graduate courses. These details may, of course, be changed in the light of experience. When the proposed commercial high school shall have been opened by the city, the work begun there may be continued at Columbia; and the University may further promote the purposes of the new high school by offering opportunities for the training of its teachers. The cost of the course, for the first five years, is to be met by a guarantee of $10,000 to $20,000 a year by the Chamber of Commerce.

Such liberal training for business men is urgently demanded. Modern economic conditions, characterized by growing complexity and rapid change, call for industrial leadership of the highest type. By what means, and how far, the University can train the "captains of industry"—these are questions to which it may not yet be possible to give final answers; but so important is the function of industrial leadership, so great the power of the "captain of industry," that the University may well attempt thus to raise the standard of commercial education.

President Eliot's Educational Reforms

In a vigorous article published in the *Atlantic Monthly*, President Hyde presents a *résumé* of the results accomplished by President Eliot, as an educational reformer, which no college bred man can read without a deep sense of the obligation which every school, every college, every university in this country owes to him. While most educated men are probably in some degree aware that President Eliot has done much for the cause of education, it is safe to say that but few realize how strongly or in how many directions his influence has been potential. The reforms which he has brought about at Harvard, and to which its magnificent growth of the last twenty years is due, have to a greater or less extent affected every other educational institution in the country, and it is surprising to find how many of the great advances which have been made in late years are directly attributable to him. Not only was he the first to introduce the elective system on a broad scale, thereby dealing a mortal blow at what President Hyde refers to as "hide bound uniformity" and "dead prescription," but he was also the first to give professional training its due importance,

to introduce three and four year courses in the law, medical and theological schools, and to insist upon an academic degree as a prerequisite for admission to these schools.

Reforms so radical and so far reaching as these naturally were not limited in their results to Harvard, and every professional school in the country has profited thereby, influenced either by the force of high example or by the pressure of rivalry. Even more striking has been President Eliot's influence in the development of graduate work, reinforced as it has been by the success of President Gilman in creating Johns Hopkins University. Until 1872, the degree of A.M. was awarded everywhere, as it was at Harvard until that time, as a purely formal matter upon payment of a small fee. In that year Harvard undertook to demand a certain amount of required work, and in a few years her example was followed by nearly every important university, the amount of required work being gradually increased until the degree of A.M. conferred by any reputable institution has now come to signify extensive scholarly attainments. In place of a few scattered postgraduates, there are now hundreds of students pursuing advanced studies in all fields of research.

But President Eliot's efforts have not been limited to the colleges and professional schools; for the recognition, for which he is largely responsible, of the importance of the secondary schools and of the necessity of correlating their work with that of the colleges is one of the most valuable results to which he has contributed. The development of a sense of unity among all educational institutions of whatever grade has always been one of President Eliot's aims; and, while our universities and colleges are still unfortunately far from realizing that the good of one is the good of all, great advances have been made through the efforts of President Eliot and those who have sympathized with his views, as evidenced by the various interstate associations of colleges and by numerous other associations formed for the purpose of discussing educational questions. Time and the gradual diffusion of more liberal views must ultimately bring about that reciprocity of action and exchange of students and instructors which to a considerable extent exists among German universities to-day.

In all of these matters President Eliot has looked at great

questions from a great height, and he has been influenced by what President Hyde describes as "the disposition to put the interests of the community first, and to find the true interest of a particular college in generous devotion to these objective ends." In so doing he has made the community and every college within it his debtor, and Columbia freely and gratefully acknowledges her obligation. In making this acknowledgment, it is gratifying to feel that we have contributed our part toward this general advancement, for in President Barnard we possessed an educational thinker who was surpassed by no one of his generation. While not so aggressive or effective an advocate as President Eliot, he was equally advanced in his views, equally alive to the great necessity for educational reform, and he exerted through his writings a powerful influence among leading educators. Although President Barnard's ideas could not all be carried out at Columbia during his lifetime, he it was who sowed the seed; and the two universities, Harvard and Columbia, are bound by ties of intellectual sympathy as strong as those which united President Eliot and President Barnard.

UNIVERSITY NOTES

Faculty of Applied Science

Department of Mechanical Engineering.—The activities of the mechanical laboratory during the winter and spring have centered around the installation of the full-sized Baldwin express passenger compound locomotive. This has been received from its donors in detached pieces and has been set up in the mechanical laboratories under the esplanade at the north of the Engineering Building. The assembled locomotive stands upon supporting wheels in bearings underneath the floor, upon which will be attached power appliances or dynamometers, each of 400 horse-power. The engine can thus be run in place at any desired rate of speed or capacity; and the experimental observations as to efficiency, economy and the like will be made a feature of the work in mechanical engineering. It is interesting to record that on Friday, April 28, the wheels were first turned

by the power transmitted to the engine from the Ingersoll-Sergeant Air Compressor. It will be readily understood that the first movement of the great machine, upon which so much time, energy and thought had been expended during the winter, was a moment of great interest to those concerned.

The development of the course for the degree in mechanical engineering has imposed upon the department the necessity of increasing the teaching staff by the creation of an adjunct professorship in mechanical engineering. The duties of this officer will be particularly in connection with the work of the students in the mechanical laboratory and in machine design. In seeking the proper person for this opening, the attention of the University authorities was directed to the advisability of being prepared in the near future to pay more attention to that part of mechanical engineering which is concerned with the marine engine and the design of steel vessels. While the Trustees are not prepared as yet to approve a specific option and invite students to avail of it, it is yet unquestionably the part of wisdom to shape the development of the department so that this step can be taken easily when the time is ripe for it. Hence, the choice of the department and of the Trustees has fallen upon Mr. William Ledyard Cathcart, who is now serving as professor of marine engineering in Mr. William H. Webb's Academy at Fordham Heights.

Mr. Cathcart's professional record in the navy began with his appointment as cadet engineer in October, 1873. His service in the Academy ended in June, 1875, and was followed by assignments to the North Atlantic station on the *Canandaigua*, *Plymouth* and *Adams*. He was commissioned as assistant engineer in July, 1877. In 1878–1881 he was with the flagship *Richmond*, on the Asiatic station. Returning to America, he was assigned in November, 1881, to inspection duty at Philadelphia, until January, 1884, when he began three years sea duty on the *Ossipee* at the Asiatic station. Returning again to inspection duty at Philadelphia from June, 1887, to April, 1889, he was then transferred to the *Yorktown* until the summer of that year, when he was assigned to duty at the League Island navy yard. He passed his examination to the grade of passed assistant engineer in December, 1884, but, having become interested in a particular line of manufacture, resigned from the navy to

pursue the work of his choice in January, 1891. He received an appointment from Mr. Wm. H. Webb, founder of Webb's Academy, as instructor in marine engineering in the spring of 1897; but on the breaking out of the war he volunteered, and was appointed chief engineer to the bureau of steam engineering at Washington. He was honorably discharged in October, 1898, and received his appointment as adjunct professor of mechanical engineering at Columbia, in February, 1899. He will begin duty in this position in October next, and will have charge of the work of the mechanical engineers in machine design, valve gearing, engine design, and the administration of the mechanical laboratories.

F. R. H.

Department of Metallurgy.—The furnace room in the basement of Havemeyer Hall has been equipped with several gas-fired furnaces for fusion and heat treatment experiments. These consist of a large crucible furnace, which will hold a crucible containing eighty pounds of metal; an oven or reverberatory furnace with a hearth 18″ × 24″, in which experimental researches in roasting ores and heating metals have been satisfactorily accomplished; and a tube muffle furnace 28″ long, for the heat treatment of metals in bars. These furnaces, in addition to the old small crucible- and muffle-furnaces and the special French regenerative furnace, have given excellent results in practical student work. A set of leaching tubs has been installed for the humid treatment of silver, gold, and copper ores. Considerable necessary apparatus has been purchased for the laboratory and furnace room; and accessories to the microscope have been procured for the development of courses on the microstructure of metals, including a photographic attachment for making micro-photographs of metal sections.

In addition to the very important gift of books from Professor T. Egleston, already recorded, the department has received many valuable gifts, chiefly for the museum. Among these are: Aluminum ores, fluxes and products; samples illustrating the heat treatment and the fracture of steel; lantern slides of iron and steel sections; a suite of products of lead smelting and refining processes, as carried out at the Argentine refinery of the Kansas City Consolidated Smelting and Refining Company; a

valuable suite of chrome and nickel steels; specimens of pig iron and slags of the Illinois Steel Company; a large framed drawing of the Taylor gas producer; a wire drawing machine; micro-sections of steel; a special suite of iron and copper alloys with the rarer metals; charcoal pig iron and slags of the Canada Iron Furnace Company.

Department of Electrical Engineering.—A large installment of Mr. Freedman's article on "The Telegraph and Telephone" appeared in the *School of Mines Quarterly* for April. This matter will eventually make a convenient text-book for use in connection with the course on these subjects.

A set of laboratory notes has been compiled for use in the laboratory section of Electrical Engineering 5. These are intended to cover the important features in the operation of electrical apparatus which will be met by such engineers in their future practice, and treats the subject purely from the engineering standpoint.

There has been added to the equipment of the department a collection of about one hundred and fifty large diagrams, on heavy manila paper, illustrating typical designs of apparatus and the connections of electrical circuits according to standard practice.

Faculty of Philosophy

Department of Psychology and Anthropology.—At the March meeting of the Board of Trustees a chair of anthropology was established and the department of psychology was made a department of psychology and anthropology. At the May meeting Dr. Franz Boas was elected professor of anthropology and given a seat in the Faculty of Philosophy. The establishment of this professorship represents an important advance for the University and for anthropology. Dr. Boas's position in the American Museum of Natural History opens to students its extensive ethnological and archæological collections, giving unusual opportunities for training and research. The subjects closely allied to anthropology—such as psychology, sociology, zoölogy, education and philosophy—are well developed at Columbia; and we shall undoubtedly have a great centre for the training of

teachers, curators and field workers in anthropology. The work in anthropology has, during the past three years, been well represented in the courses given by Dr. Boas, as lecturer, by Dr. Farrand and by Dr. Ripley, and the University is fortunate in being now able to place at its head a man of international reputation. Dr. Boas, after receiving the doctorate at Kiel, qualified as docent in the University of Berlin, and was appointed assistant in the Royal Ethnographical Museum. He has conducted important expeditions to British Columbia, Alaska, California and Baffin Land, in part under the auspices of the British Association for the Advancement of Science and of the American Museum of Natural History. He has published numerous books, monographs and papers, covering a wide range of anthropological topics and contributing to the advancement of the science in many directions—in physical anthropology, in ethnology and in linguistics. He has been vice-president of the American Association for the Advancement of Science, and is a member of many learned societies, including those at Berlin, Vienna, Moscow and Rome. He is one of the editors of the *American Anthropologist* and of the *Internationales Archiv für Ethnologie*.

Dr. Edward Thorndike has been appointed instructor in genetic psychology by the Trustees of Teachers College. After taking his doctorate here last year, he was made instructor in education in Western Reserve University, where he has been very successful in teaching and in research. His investigations on animal intelligence, carried out at this University, have attracted much attention, being during the year the subject of special articles in *Nature*, *Science* and *Natural Science*, and of special papers presented by Principal Lloyd Morgan before the British Association for the Advancement of Science and by Professor Wesley Mills before the American Psychological Association. All directions in psychology are now represented at Columbia. We are able to cover the whole science in a course given by eight instructors, each of whom is a specialist.

Experimental researches, in the hands of seventeen graduate students, have been in progress in the psychological laboratory during the present year. Five of these, which have been accepted in partial fulfilment of the requirements for the degree of doctor of philosophy, are as follows: After-images, Mr. Franz;

the accuracy of movement, Mr. Woodworth; inhibition, Mr. Breese; the effects of the weather on conduct, Mr. Dexter; and the emotion of joy and its expression, Dr. Dearborn. Among the other researches the following may be noted: Tests of students of the College, by several graduate students, and of the students of Barnard College by Miss Cody and Miss Brown, under the supervision of officers of the department; objective methods for studying the expression of the emotions, Mr. Gerrard; the movements accompanying feelings, with special reference to music, Mr. McWhood; an experimental study of belief, Mr. Sumner; the formation of motor habits, Mr. Germann; muscular and mental fatigue, Mr. Franz; the factors of recognition, Dr. Dearborn; types of imagery, Dr. Lay; the interaction of sensations, Mr. Huntsman; the perception of position in space, Mr. Spencer; æsthetic preferences, Miss Young; preference for colors and their combinations, Miss Stettheimer; character and its expression, Mr. Bosse; attention, Mr. Fowler; the production of movement, Mr. Greene; the effect of suggestion and expectation on perception, Mr. Badley and Mr. Gillespie. Researches in different directions have also been conducted by the officers of the department.

J. McK. C.

Department of Germanic Languages.—Three new courses appear in the departmental announcement for the year 1899–1900. Professor W. H. Carpenter will give a two-hour course in Dutch, which is described as "an elementary course in the language, with miscellaneous reading and a general survey in lectures of the history of Dutch literature." Professor Thomas will give a course of lectures in the German language upon the history of German literature in the nineteenth century and also, in conjunction with Mr. Babbitt, a new teachers' course. This last will deal with the educational value of German, with methods of teaching, the organization of school work in German and cognate topics. The German lectures have been set for a late hour in the day, in order that New York teachers may attend them.

The new provision for the study of Dutch is obviously an important step in the right direction. That Columbia University, in the city of New Amsterdam, should for years have given regular instruction in the Scandinavian languages, while ignoring

the no less important language of Holland, was, to say the least, anomalous; though the anomaly had, like all other things, its historical explanation. Henceforth it is intended that Dutch shall be regularly included in the departmental programme. If the demand for it shall prove as great as it reasonably should be in this city of Dutch antecedents, it will be the aim of the department to meet the need as it manifests itself. For the present, Dutch takes its place in a three-year cycle with Danish and Swedish, only one of these three being given at any one time.

A circular inviting gifts of old Dutch books, which found their way to this country during the colonial period, has been sent to descendants of the early Dutch settlers in many parts of the country. A number of gifts of valuable books have already been received in response to the call. The University Library has at the present time over 2,500 volumes in the Dutch language, which form the nucleus, at least, of the special library which it is hoped this movement may aid to create. Columbia, it might have been further pointed out in the circular letter, is, in addition to its library facilities, the peculiarly fitting custodian of a memorial of the kind, because of the exceptionally large number of the descendants of Dutchmen among her alumni, from the earliest years of the institution down to the present day.

The "Deutscher Verein der Columbia Universität," of which mention was made in the last number of the QUARTERLY, has proved a prosperous organization. Its meetings, both literary and social, have been well attended, and great interest in it has been shown by representative Germans of New York. On the evening of April 8, the Verein attended a "Commers" given in its honor by the German Press Club of New York and was encouraged, by the speeches and the general good fellowship of the occasion, to feel that it has in these days a distinct mission as a promoter of international comity. On April 25 the Verein gave its second public lecture. The speaker was Mr. George von Skal, of the *Staats-Zeitung*, who spoke upon "Deutschland als Militärstaat."

During the months of February and March a series of public lectures in the German language were given under the auspices of the department. The speakers and their subjects were as follows: Rev. Gustav Gottheil, Goethe's "Epilog zu Schillers Glocke";

Dr. Julius F. von Vesteneck, "Das Leben in den Alpen"; Rev. August Ulmann, "Die Entwickelung des religiösen Denkens und Lebens in Deutschland"; Mr. Henry E. Krehbiel, "Das Volkslied in Amerika"; Mr. Louis Viereck, "Eine Reise nach Alaska"; Mr. Heinrich Conried, "Die Kunst des Sprechens"; Dr. Rudolf Tombo, "Walther von der Vogelweide." Notwithstanding the frequent perversity of the weather, the attendance at these lectures was throughout encouraging.

At the celebration of the seventieth birthday of Carl Schurz by the German-American citizens of New York, March 8th, the announcement was made by Mr. Henry Villard of the gift of a memorial fund of $20,000 to the University, half of which is to form the permanent endowment of a Carl Schurz Library of German Literature and half the endowment of a Carl Schurz Fellowship in German. The announcement was received with peculiar satisfaction, not only on account of the adaptability of the income of the fund, but because of the recognition which it seemed to imply of the efforts which the University has made along the lines of German instruction. Both funds are bestowed in a way admirably calculated still further to extend the usefulness of the department in this direction. With the necessary contraction of the number of University fellowships,—to take effect after July, 1900, when this fund, too, will be first available,—the need of endowed fellowships in special subjects will become even more vital than has hitherto been the case.

The library fund is, if possible, still more timely. Under existing conditions it has been found necessary to expend such appropriations as have been allotted to the department, not alone on German literature, but on the literatures of the other Germanic nations, since this is a Germanic and not specifically a German department. The library, although it has a collection of between 5,000 and 6,000 volumes on the German language and literature alone, has thus grown up unequally and is full of lacunæ sometimes inexplicable to one who does not know its genesis. When the considerable income of the Carl Schurz fund can be counted upon with certainty for the direct purposes of the German library, it will in a few years be altogether possible to remedy these defects of continuity in the collection, and to make it, as it should be, one of the most valuable adjuncts of German instruction, not

only within the University but outside of it for a vast German-speaking community.

Department of Romance Languages.—Four lectures on Rousseau were given by M. Rod, formerly professor of French literature in the University of Geneva, in March and April. On April 6 Professor Raoul Pictet, of Geneva, gave a French lecture on "la Science et la Liberté." On Wednesday evenings in April Dr. C. H. Page gave a course of four lectures in English on Victor Hugo. A similar course will be given in 1899–1900 by Professor Todd. His subject will be "la Chanson de Roland." The regular course of Thursday afternoon French lectures was closed on April 27. The course for 1899–1900 will begin on November 2.

The "Sociétés Françaises" of Columbia University and Barnard College gave jointly, on April 22, 24 and 27, three performances of Scribe and Legouvé's *Bataille de Dames*, in Brinckerhoff Theater, Barnard College.

D. C. Heath & Co. have just issued a volume of selections from Lesage's *Gil Blas*, prepared by Professor Sanderson, formerly of Harvard University, with an introduction by Professor Cohn. Professor Cohn has also written an introduction for Mr. Charles Renauld's translation of *Cyrano de Bergerac*, published by the F. A. Stokes Co. Dr. C. H. Page has published, with the Doubleday & McClure Company, Cyrano de Bergerac's *Voyage to the Moon*, in a seventeenth century translation with introductory essay and notes.

In the Faculty of Philosophy there are candidates for the higher degrees as follows:

Department.	*Ph.D.*	*A.M.*	*Total*
Philosophy and Education	6	22	28
Psychology and Anthropology	4	—	4
Literature	3	7	10
Latin	2	4	6
Greek	–	1	1
Germanic Languages	1	1	2
Semitic Languages	1	2	3
Music	–	2	2
	17	39	56

Professor Butler will deliver the Commencement address at the University of Michigan. His work upon *The Meaning of Education* has been translated into French, German and Italian.

Professor Jackson is to represent Columbia and the American Oriental Society at the International Congress at Rome next October. His recent book on *Zoroaster* is to be translated into Gujarātī, the language of the modern Parsis, and probably into German also.

Mr. Louis H. Gray, fellow in the Indo-Iranian languages, and Mr. M. Schuyler, Jr., '99, presented papers on Sanskrit and Persian subjects at the annual meeting of the American Oriental Society.

The Department of Literature purposes to issue a numbered series of literary monographs, to be published by The Macmillan Company. Number 1, by F. W. Chandler, is entitled *The Romances of Roguery; a Study of the Picaresque Novel;* Number 2, by J. G. Underhill, will deal with *Spanish Literature in Elizabethan England.*

Faculty of Political Science

Mr. C. M. Lacey Sites, University fellow in constitutional law, 1897–98, has been appointed professor of political science in the Nan Yang College, Shanghai, China. The college was established by imperial edict in 1897, and is devoted primarily to fitting young men for governmental employ and civil positions throughout the empire.

The secretary of labor of New Zealand has obtained permission to republish, in the official *Journal of Labor* of New Zealand, the monograph by Dr. Fred. S. Hall on *Sympathetic Strikes and Sympathetic Lockouts*, which appeared in the tenth volume of the *Studies in History, Economics and Public Law.* The forthcoming numbers of the same series are: *Centralized Administration of Liquor Laws in the American Commonwealths*, by Clement Moore Lacey Sites, and *The Growth of Cities*, by Adna Ferrin Weber. The latter will make an entire volume of the series by itself.

D. Appleton & Co. announce for publication in June, *The Races of Europe: A Sociological Study*, by Dr. W. Z. Rip-

ley; accompanied by a bibliography of the anthropology and ethnology of Europe, prepared under the direction of the Boston Public Library (176 pp.). The work will contain eighty-five maps and nearly two hundred and fifty half-tone portrait types, selected by experts from all parts of the Continent. Publication will be simultaneous in New York and London.

Faculty of Pure Science

Department of Zoölogy.—Four valuable gifts have been received: First, an endowment fund of $10,000 from Mr. Isaac Michael Dyckman; second, a continuation of the John D. Jones Scholarship of $200; third, a collection of shells, valued at $3,000, from Mrs. John D. Van Nostrand; fourth, a fund of $5,000, to be devoted to purposes of exploration and publication, from Charles H. Senff.

The first gift, to be known as the Dyckman Fund for the Encouragement of Biological Research, was founded as a memorial of Mr. Dyckman's uncles, who were alumni of Columbia College. The elder of these, Jacob Dyckman, graduated in the class of 1810, and was a distinguished physician and investigator. He died when but little over thirty years of age, and was already the author of several volumes dealing with medical and biological subjects, a member of and officer in learned societies, a fellow and trustee of the College of Physicians and Surgeons, and health commissioner of New York. The younger, James Dyckman, of the class of 1811, died at the age of 21, shortly after completing his legal studies. The income of the present fund, amounting to $400, will be awarded annually, either as a whole or by division, in order to promote the interests for which the fund was designed. The first appointee is Mr. H. A. Surface, of Cornell University. It is hardly possible to express the pleasure which this most generous gift has afforded the members of the department. It is given entirely without restriction and will be of the greatest service to the progress of biology in New York.

The second gift enables the John D. Jones Scholarship to be continued during the present season. This bears an income of $250—a fifth of which is to be assigned to the Marine Labora-

tory at Cold Springs Harbor, L. I., for a table; the remainder to be awarded as a scholarship, to enable a student to pursue investigations there. This gift is also most highly appreciated. It was granted by the Wawepex Society, through its president, Mr. Walter R. T. Jones, of the class of 1850. The first Jones scholar is Mr. John C. Torrey, of the University of Vermont.

The excellent collection of shells given by Mrs. Henry D. Van Nostrand contains about 6,500 species, many of great interest and value. It contains a large portion of the Bland collection of West Indian land shells and many specimens from the Perry expedition. Mr. Van Nostrand became interested in conchology at an early age and began a collection of shells which easily ranks with the best in the country. The nucleus of the present collection was bought from Mr. John A. Redfield about 43 years ago.

With the liberal gift above mentioned, Charles H. Senff has most generously offered to send another expedition to the Nile, in search of Polypterus, in case there is sufficient promise of securing the embryos of this historic fish. Five hundred dollars of this fund will be set aside for the publication of a *Memoir upon the Anatomy of Polypterus*, to be undertaken jointly by Messrs. Dean, Harrington, McGregor, Strong, Herrick and Professor Wheeler of the University of Chicago. One thousand dollars will be devoted to two annual fellowships, enabling Messrs. Harrington and Sumner (who have been recommended to the Council for these awards) to devote a year, if necessary, exclusively to this work.

Professor E. B. Wilson, after ascertaining that the trip to Khartoum was impracticable, established a temporary laboratory at Mansourah upon the lower Nile, the point visited by Messrs. Harrington and Hunt last summer. The fishermen assured him that Polypterus would return in quantity and raised his hopes greatly; but, when after a long period the fish began to appear, it was ascertained that all the females had spawned, so that further efforts to obtain the eggs of Polypterus would be futile during the remainder of the season. Professor Wilson is now occupying the Columbia University table at Naples and is engaged upon the revision for the third edition of his volume, *The Cell*, which is to be translated into Italian and French. Professor Wilson will remain at Naples for some time.

Summer plans are now maturing. Five members of the department will be engaged either as teachers or lecturers at the Wood's Holl zoölogical station. It is possible that two members of the party will return to the Pacific coast to study the embryonic developments of certain rare types of fishes.

Marine work of the department will be still further extended by a laboratory at a Florida station, probably Miami. This station will be mainly supported by the Wagner Free Institute of Philadelphia, and will afford an opportunity for advanced students, especially during the winter, as well as a means of greatly strengthening the teaching collection of the department.

It is interesting to note that Professor Osborn's *From the Greeks to Darwin* is also being translated into Italian.—Professor Brook's work, *The Foundations of Zoölogy*, appeared in January and has recently received in *Science* a very flattering review by President Jordan of Leland Stanford.—The department's Puget Sound papers now reach thirteen numbers, the last being those by Professor Ritter, of the University of California, and Professor McMurrich, of Michigan.—It is greatly to be regretted that Professor Dean's collection of embryos of Hag fishes could not be described in this country, since none of our institutions could afford to bring out the illustrations. It has accordingly been sent abroad and will be published in Jena during the course of the coming summer in the *Festschrift* of Professor von Kupffer.—Professor Osborn has been asked to become one of the editors of a new journal founded by Professor Schwalbe of Strassburg.

Department of Physics.—The meteorological apparatus given by President Low to the University has been mounted on the roof of Fayerweather Hall, and daily observations made with it are posted on the bulletin board. A new anemometer has been secured, and regular records of barometric pressure, wind-velocity, temperature, humidity and rainfall are obtained.

At the annual exhibition of the New York Academy of Sciences the following pieces of apparatus were exhibited by the department: a mechanical illustration of Kirchoff's principle, constructed by Professor Hallock; an improved form of Thompson's double bridge for low resistance, exhibited by H. C. Parker,

who also showed a standard "Richanstalt Clark-Cell" and a bridge for the comparison of standard ohms by the Carey-Foster method; Wehnelt's electrolytic interrupter, for use with the induction coil, made by Dr. F. L. Tufts; a platinum thermometer, made by C. C. Trowbridge, and metallic cylinders used by him in determining the specific heat of metals at low temperatures; Hertz wave apparatus, made and exhibited by A. E. Lawrence. Professor Hallock acted as chairman of the general committee of arrangements, and Mr. Trowbridge was in charge of the section of physics.

Much duplicate apparatus has been placed in the laboratories; and means have been furnished to the students which will enable them to make absolute measurements on electromotive force, the strength of magnetic fields, voltaic currents and conductivity.

Among the newly acquired pieces of apparatus are two spectroscopes, two balances, a Wimshurst machine, a Regnault hygrometer and a Flicker photometer made by Professor Rood.

A number of investigations have been carried on during the past year on the photometry of colored light, the Hertz waves, wireless telegraphy and certain branches of acoustics. In this work advanced students have taken an active part.

Department of Geology.—Among the unfinished manuscripts left by the late Professor Newberry was one entitled *The Later Extinct Floras.* It dealt with the fossil plants of the Cretaceous and Tertiary beds of the West and was an important contribution to paleobotany. The volume of plates was issued years ago, but the descriptive part was very incomplete at the time of Dr. Newberry's death. Dr. Hollick has taken the manuscript and plates in hand, and with filial regard for his old friend and teacher has reviewed and completed the work. It will shortly appear as a monograph of the U. S. Geological Survey. Dr. Hollick has also been engaged for some time past in the investigation of the relations between the present forest growth in New Jersey and the geological formations, and also in studying the relations of the former to the fossil silva. The results will appear in an early report of the State Geologist, but a preliminary paper has recently been issued in the *American Naturalist.*

Professor Kemp will continue work in the Adirondacks during the coming summer for the U. S. Geological Survey, and will be engaged in the northeastern portion of Essex county. He has recently forwarded to the State Geologist at Albany a report that deals chiefly with Warren County. A paper on the *Titaniferous Iron Ores of the Adirondacks* will appear in the forthcoming nineteenth annual report of the Director of the United States Geological Survey.

Dr. A. A. Julian will shortly issue, through the Franklin Institute in Philadelphia, an important contribution on the *Elements of Strength and Weakness in Building Stones.* The paper gives the results of many years of observation. J. D. Irving, fellow in Geology, has completed his Ph.D. thesis upon the *Eruptive Rocks of the Northern Black Hills, S. D.*, making an important contribution to the geology of a little-known area.

These papers serve to indicate the work of the department, aside from current teaching. The summer school of geology will be held this year in two sections. One, in the Hudson Valley under Professor Kemp and Mr. van Ingen, will study the crystalline rocks in the Highlands and the stratified rocks near Rondout. The later session, in connection with the summer school of mining, will be held in Missouri.

The department has received a fine suite of meteorites from Mr. George F. Kunz, and gifts of rock and ores from Professor W. C. Knight, of Laramie, Wyo.; S. S. Fowler, Sci. '84, Nelson, B. C.; L. H. Barnett, Sci. '94, Rico, Colo.; and F. C. Nicholas, of New York.

Department of Astronomy.—The department announces a gift of $10,000 from Miss Catherine W. Bruce, of New York City, for "the measurement and discussion of astronomical photographs." This recognition of the work of the department on the lines indicated is exceedingly gratifying, and will make it possible for the work to be continued for some years to come. This gift of Miss Bruce makes a total of $22,100 contributed by her in the past five years.

Professor Jacoby's researches with photography of the stars immediately surrounding the north pole of the heavens have now

progressed far enough to make the ultimate success of the undertaking tolerably certain. It has therefore seemed desirable to go to the trouble and expense of having a special polar telescope constructed, so that the photographic observations may be effected under the most favorable possible conditions. Miss Bruce, with her usual generosity to astronomical science, has contributed a sum sufficient to make the proposed instrument practically possible. For the better elimination of the effects of atmospheric refraction, it is best that photographs for the present purpose be made at some point on the earth near the terrestrial pole. The most convenient available station is the observatory at Helsingfors; and negotiations are now in progress with the Russian authorities which will, it is hoped, soon lead to the actual carrying out of Professor Jacoby's new plan. Once the necessary photographs are secured, they can be brought to New York for measurement and computation. The Columbia observatory already possesses two measuring micrometres by Repsold of Hamburg, and for the computations has the efficient assistance of Misses Harpham, Magill and Tarbox.

All the papers published on the Rutherfurd stellar photographs have been collected in one volume of 614 pages. The edition is very small, and will be distributed to a few observatories especially interested in the work.

The Trustees of the University have erected on the Green, near the corner of 120th Street and Broadway, a little building to be used for housing a transit instrument for time determinations.

S. Alfred Mitchell, Ph.D. (John Hopkins University, 1898), now research fellow connected with the Yerkes Observatory of the University of Chicago, has been appointed tutor to succeed Dr. H. S. Davis, who has resigned.

Frank Schlesinger, Ph.D. (Columbia, 1898), has accepted from the superintendent of the United States Coast and Geodetic Survey, Dr. H. S. Pritchett, an appointment as observer at Ukiah, California, Dr. Schlesinger becomes one of the observers in the international scheme for the determination of variation of latitude.

Barnard College

Barnard College has recently received several important gifts. Mr. Joseph Pulitzer has given $10,000 for the foundation of an

undergraduate scholarship in memory of his daughter, Lucille Pulitzer, who died recently, and who at the time of her death was engaged in completing her preparation for entrance to college. This scholarship has an annual income of $400, and is to be awarded every fourth year to the New York City girl who passes the best entrance examinations to the Freshman class. At the April meeting of the Executive Committee two scholarships of $150 a year were established through a gift of $6,000 from Miss Emily H. Bourne. One of these is to be known as the Emily James Smith Scholarship, in honor of the present Dean; the other, as the Anna E. Barnard Scholarship, in honor of a sister of Miss Bourne. Each of these is to be awarded annually, though they may be made tenable for longer than one year.

The number of scholarships that are available at Barnard College does not seem to be generally appreciated. We give the list for 1899–1900 in full:

12	Brooklyn Scholarships	$1800
4	Curtis Graduate Scholarships	600
1	Fiske Graduate Scholarship	250
1	Ella Weed Scholarship	150
1	Veltin Scholarship	150
1	Jennie B. Clarkson Scholarship	150
1	Mrs. Donald McLean Scholarship	150
1	Trustee Entrance Scholarship	150
12	Students Scholarships	1800
1	Pulitzer Scholarship	400
1	Emily James Smith Scholarship	150
1	Anna E. Barnard Scholarship	150
1	Brearley Scholarship	150
38		$6050

The departments of botany, physics and chemistry have always excited a great deal of interest among the friends of Barnard College, and during the past few years a number of gifts have been received for the purchase of apparatus and books to be used by these departments. Miss Laura Billings, an associate member of the Board of Trustees, who has always shown a keen interest in the scientific work of the College, recently made a gift of $250, for the special purpose of enabling the department of zoölogy to purchase types and other equipment of which it has been in need.

On April 28 the Barnard Botanical Club, which was organized shortly after the death of the late Professor Emily L. Gregory, gave a large reception, at which the work for the year was placed on exhibition. The Club has raised a fund of $500, which has been turned over to the College for the purchase of apparatus and charts. In addition, it has presented to the College a handsome bronze mural tablet, which is to be placed upon the walls of one of the laboratories, and which bears this inscription: "This laboratory for work in physiological botany is dedicated to the memory of Emily L. Gregory, Ph.D., the first Professor of Botany in Barnard College, from its opening in 1889 to the time of her death in 1897."

The charter of Barnard College has been amended, so as to provide for an additional Trustee, to be elected by the alumnæ from among their own number and to serve on the Board for four years. This will make it possible for the alumna Trustee to be voted upon before the annual meeting of the Trustees in May.

Teachers College

The following comparisons are interesting as showing the line of development upon which the College is entering:

ENROLMENT

	1897–98	1898–99
Graduate students	0	78
Undergraduates	79	140
Special students	65	79
Extension students	299	1173
Students from other departments of the University	32	38
Horace Mann School	391	534
Total	866	2042

The following appointments have been made since the appearance of the March number of the Quarterly: Emily Vanderbilt Brinkerhoff, from the Mt. Vernon High School, instructor in English, Horace Mann School; Mrs. Edith Romeyn Darrach, Cambridge, Mass., Head of College Hall; Dr. Rowland G. Freeman, of the Roosevelt Hospital, lecturer in bacteriology; James Jardine, instructor in physical training, Horace Mann School; Miss Harriet Adelaide Luddington, from the State Normal School, Fitchburg, Mass., instructor in geography in

Horace Mann School and assistant in Teachers College; Dr. Paul Monroe, from an instructorship in history, Teachers College, to adjunct professor of the history of education; Rudolph Rex Reeder, Teachers College, graduate student, 1898–99, instructor in the theory and practice of teaching; Dr. Edward Lee Thorndike, from Western Reserve University, College for Women, instructor in genetic psychology; Charles Weick, Ohio State University, instructor in wood-working and pattern-making; Charles F. von Saltza, Chicago, instructor in art; Maurice E. Bigelow, Harvard University, instructor in biology; George S. Kellogg, New York, curator of museum.

The Horace Mann School moved from 9 University Place to Morningside Heights in September, 1894, and has since that date occupied rooms in the buildings of Teachers College. In September, 1900, it will move into its own new building, which, with the land, will cost half a million dollars. The site is upon Broadway, extending from 120th to 121st streets. The building will have a frontage of 200 feet and a depth of 100 feet, and will accommodate about 450 pupils in the kindergarten and elementary school, and about 450 in the high school. The building will be a model in respect to school architecture and equipment. The results of the latest research will be applied to heating, lighting, ventilating, coat- and toilet-rooms, pupils' desks, lunch rooms, gymnasium and bath rooms. The basement will contain lunch rooms, bicycle rooms and janitor's quarters. The first and second floors will contain a large assembly hall, the class rooms for the kindergarten and elementary school, and the offices of the superintendent and of the principal of the elementary school. The third and fourth floors will contain the class rooms for the high school, a library and reading room, a gymnasium, offices for the principal of the high school and for high school teachers.

The Trustees have received from Mrs. Adelaide H. Monroe the sum of three thousand dollars for the founding of the Hoadley Graduate Scholarship.

W. H. N.

General Notes

James H. Canfield

"James Huline Canfield, LL.D., who has given up the presidency of Ohio State University to become librarian of Columbia University, was born in Delaware in 1847, but for the first twenty years of his life lived in Brooklyn, where his father was a well-known clergyman of the Episcopal faith. His early education was at the Polytechnic Institute in Brooklyn, where he was a classmate of President Low. He was graduated from Williams College in 1868, and his alma mater has since conferred upon him the degree of A.M. in 1877 and that of LL.D. in 1893. After graduation, Dr. Canfield settled in the west and began his educational work as superintendent of schools at St. Joseph, Mich. From there he was called to the State University of Kansas as professor of history and English literature, which post he held for seven years; he was then transferred to the professorship of history and political science in the same institution, which post he retained until 1891. In that year he accepted a call to the chancellorship of the University of Nebraska, which office he filled with distinction, until he resigned it in 1895 to accept the presidency of the State University of Ohio, which he now holds. He has also been secretary and president of the National Educational Association.

"From a personal point of view Dr. Canfield is well known throughout the West as an orator of prominence, and particularly as a man of great personal magnetism. In the East his acquaintance is varied; and in New York he will return to a coterie of friends won at college and elsewhere, numbering among others Hamilton W. Mabie, Albert Shaw, R. R. Bowker and names equally well known in publishing circles.

"Commenting upon Dr. Canfield's resignation from the University, the Columbus *Citizen* says that the following changes have resulted in the institution under his administration:

"'The organization of the university upon a university basis, with independent colleges, each with its dean and faculty. The doubling of the permanent income and the permission to anticipate $300,000 of this income for much-needed buildings and equipment, the buildings constructed being: Boiler house,

$30,000; power house, $20,000; armory, $80,000; biological buildings, $50,000, and Townsend hall, $110,000, as well as chapel improvements, $10,000. The increase in attendance (in spite of dropping the preparatory department and in spite of the advanced requirements), from about 750 to 1,150.'

"In the appointment of Dr. Canfield, President of Ohio State University, to the position of Librarian of Columbia University, the friends of the latter institution see, or at least fancy they see, the beginning of a new library movement in New York City. For some time there have been city libraries and college libraries, the one class ministering to a general reading public and the other keeping its wealth of books for students limited to use by their own adherents. Dr. Canfield, however, has the reputation of being an educational expansionist, and it is said to be distinctly a possibility that his intimacy with Dr. Billings, the librarian of the Public Library, will give rise to a combined effort toward usefulness on the part of these differing institutions."—*Commercial Advertiser.*

UNDERGRADUATE NOTES

This is preëminently the season of athletics, the time of the year when in comparison with baseball, rowing, track athletics, golf, tennis, and lacrosse, all else seems of very minor importance. The subject of Columbia's athletic prospects for the present season is fully dealt with elsewhere in this number of the QUARTERLY, so that the chronicler of these notes must, in his endeavors to interest, entirely forego the advantages of treating this timeliest topic. In passing, however, it is worth our while to notice the far greater hold that out-of-door sports are taking upon the undergraduates in general, quite apart from teams and organized effort. The greater facilities of an uptown site, of course, account for this. The great open space opposite the Library and popularly called the Field, is an invaluable adjunct to the University, and it is sincerely to be hoped that in the near future steps will be taken to secure this tract of land definitely for the use of the students. On the diamond, when the 'Varsity nine is

not practicing, many match games of baseball are played by the representatives of societies, class and sections. For example, on one Saturday Kings Crown and the Deutscher Verein contested, and another day the two sections of the Junior class in political economy crossed bats. These games arouse great interest and do much towards bringing men into closer contact.

Class-day has been set for Monday, June 5th. The exercises will be held in the gymnasium at 2.30 P. M. The speakers are as follows: President F. S. Hackett, address of welcome; Geoffrey Parsons, historian; W. G. Kellogg, class-poet; H. W. Zinsser, prophet; G. P. Fort, presentation orator; A. A. Fowler, valedictorian, and G. S. Harrison, yew-tree orator. A new function, Class-day Evening, will this year be instituted. It is to be held in the gymnasium, where there will be music for informal dancing, and on the green, where the beautiful grove will be illuminated for promenading. There the Glee Club will give an open air concert and the refreshments will be served.

Columbia's past good fortune in debating deserted her this year. The second debate with Chicago, which we hoped would prove another victory for our team, went to our adversary for greater rhetorical finish and an able defence of the weaker side of the argument. As the series now stands, we shall be obliged to debate Chicago again, next year, to decide the tie. In April, the Philolexian Society defeated the 23d Street branch of the Y. M. C. A., the subject of the debate being "The Popular Election of United States Senators." Our men defended the present system. In the last number of the QUARTERLY there was a misstatement with regard to the inter-society debate between Philolexian and the Barnard Literary Association. It was the former organization and not the Barnard, as we then announced, that won the contest.

Our musical organizations have given two important concerts in New York this spring. In March, the Glee Association—comprising the Glee, Banjo and Mandolin Clubs—gave a very successful "Annual," through which Columbia's reputation in this field, lately not of the highest, was fully redeemed. The Philharmonic Society gave its concert in April and also gained credit for itself and Columbia. In addition to the city performance, the Glee Association has given a number of out-of-town concerts. The leader for next year will be Mr. Bingham.

The track team play, *A Night Off*, mention of which was made in the March QUARTERLY, has been given a number of times outside of New York, with great success and very substantial financial results for the track team. This company visited Orange, Brooklyn, Yonkers, Lakewood, and Newton, Massachusetts. The extra performance of *Cleopatra* at the Waldorf-Astoria, for the benefit of the J. Hood Wright Hospital, was also a success. The latest dramatic event, however, is the performance given by the French societies of Barnard and Columbia. The play, *La Bataille de Dames*, was given three times in the theatre of Fiske Hall, Barnard College. This is the first French play ever produced at Columbia.

The last two speakers for the season before Kings Crown were Mr. John Kendrick Bangs and Mr. William Dean Howells. The Deutscher Verein also is very active, particularly in a convivial way. One of the most interesting events of the season was the "Kommers" tendered to this society by the German Press Club, in April.

Spectator is enjoying great success under the new régime. The present system has thoroughly justified itself, and Columbia now has a paper which, though only a semi-weekly, will stand comparison with the *Harvard Crimson* and quite surpasses the *Princetonian* and *Yale News*. A. A. Fowler has resigned from the editor-in-chiefship and from the paper. W. L. M. Fiske, Jr., has taken his place. G. S. Hellman, '99, and H. H. Burdick, '00, have been elected to the managing board.

A matter of no small interest is Columbia's share in the international chess tournament between Oxford and Cambridge, on the one side, and Harvard, Yale, Princeton and Columbia, on the other. Out of the 2½ games that our side won, against the 3½ of our opponents, Columbia gained 1½.

The Senior Class, College and Applied Science, gave a dance, Friday, April 22, in the gymnasium. The excellent floor of this building has put it in constant requisition for dances this season, and is gradually assisting to arouse a new social life among Columbia students.

W. A. BRADLEY, '99.

ALUMNI NOTES

In appointing Robert C. Cornell, '74, as Grand Marshal for the anniversary meeting on Commencement Day, the Alumni Council have instituted the practice, which they hope will continue, of selecting annually as Grand Marshal a representative of the class which is celebrating its twenty-fifth anniversary.

It is interesting to note that on the U. S. S. *Restless*, during the war with Spain, one-quarter of the men aboard, including officers and crew, were Columbia graduates. Her complement was four officers and twenty-eight men. The following were the names of the Columbia alumni, with their ratings: Charles T. B. Rowe, '90, chief yeoman; Theo. H. Joseph, '97, gunner's mate; Gale H. Carter, '96, coxswain; Philander H. Godwin, '99, Jacob S. Schlussel, '98, Bradford Darrach, '01, Frank H. Curry, '98, and Milton Weil, '99, seamen.

John E. Boyer, l. '91, was appointed captain of Co. M, 1st Washington Volunteer Infantry and is at present with his regiment at Manila.

Dr. C. J. Proben, P. and S. '90, received a commission as first lieutenant and sergeant in 1st regiment, N. Y. V. Engineers, June 28, 1898. He saw service in Puerto Rico, with the Fifth Army Corps, and was mustered out January 25, 1899.

The Dyckman "Fund for the Encouragement of Biological Research" is established in memory of two brothers, graduates of Columbia in the early part of century. They were sons of Jacobus Dyckman (b. 1748, d. 1832), of Kingsbridge, member of the Constitutional Convention, and of Hannan Brown. Jacob Dyckman (b. 1789, d. 1822), A. B., Columbia, 1810, fellow of the College of Physicians and Surgeons, 1813, was a physician and investigator of great promise. He died at the age of 33, an author of several works upon medical and biological subjects, a member of and officer in learned societies and health commissioner of New York. James Dyckman (b. 1792, d. 1813), A.B., Columbia 1811, died at the age of 21, just after completing his legal studies. We regret to record the recent deat of Mr. Isaac Michael Dyckman, who established this fund.

News of the College Classes

[In this department it is intended to publish items of current interest concerning members of all classes of the College. So far as possible, the news for each class will be presented at regular intervals—as often, at least, as once a year. In order that this plan may be carried out effectively—with the result, it is hoped, of preserving college friendships and maintaining loyalty to the College—*all graduates are cordially invited to send to the* Editorial Committee *news items about members of their own or other classes.*]

1840–1872

W. C. Schermerhorn, '40, and J. H. Van Amringe, '56, are the oldest officers of the University in terms of service. The former was elected trustee and the latter appointed tutor in 1860.—Rev. S. M. Akerly, '51, of Newburgh, died of heart disease in March.—Rev. Lea Luquer, '52, has held the rectorship of St. Matthew's Church, Bedford, New York, since 1866. Both his sons are graduates of the college.—Robert Goelet, '60, died at Naples, April 27. He represented the sixth generation of his family in this country.—Rev. Joseph Greenleaf, '60, died in February.—B. H. Campbell, '68, has recently been reappointed a member of the New Jersey State Board of Education.—Professor W. M. Sloane, '68, represents the school of political science on the editorial committee of the Quarterly.—S. G. Ashmore, '72, has held the professorship of Latin in Union University since 1881.

1876

Secretary: L. O. Ivey, 46 South Street, New York City.

Rev. Harold Arrowsmith has for three years been in charge of Trinity Church, Lenox.—Herman Drisler is principal of the Drisler School, on East 49th street, which has for many years sent a large quota of students to Columbia College.—Richard T. Ely, who was professor of political economy at John's Hopkins from 1881 to 1892, has since then been director of the School of Economics, Political Science and History at the University of Wisconsin. Three of his books on economics have been translated into Japanese and one into Dutch; while another has been printed in raised characters for the blind.—Jasper T. Goodwin is in business with the Underwriters' Fire Extinguisher Company, at 280 Broadway.—Rev. Cornelius W. Mor-

row is to succeed Dr. Bacon as pastor of the First Congregational Church at Norwich, Conn.—Isaac N. Seligman is manager of the firm of I. & W. Seligman, bankers, the fiscal agents of the navy and state departments and for the Philippines.—W. O. Thayer has been since 1895 professor of English literature at Lehigh University.—M. H. Throop, Jr., has left the ministry and is conducting an entertainment business, with headquarters at New York City.

1880

Secretary: Rev. Frank B. Draper, New Milford, Conn.

C. S. M. Belden has been since 1887 rector of St. George's Church, Astoria.—W. G. LeBoutillier served as acting assistant surgeon on the hospital ship Missouri during the Spanish War. F. B. Draper is now rector of All Saints Memorial Church, New Milford, Conn.—L. H. King is secretary of the executive board of the New York Central and Hudson River Railroad Company.—William Newbrough is in private practice as a civil engineer in Evanston, Wyoming, and is engineer for several important irrigation and mining companies.—S. G. Shaw is pastor of the First Reformed Presbyterian Church at Cambridge, Mass., and has been for ten years clerk of his Presbytery.

1884

[*No Secretary.*]

C. R. Carter served as cockswain of the *Nahant* during the war with Spain.—C. J. Deghuée is instructor at Trinity School.—J. W. Dowling was in 1896 elected professor of the theory and practice of medicine in the New York Homeopathic Medical Hospital.—H. S. Hathaway, M.D., College of Physicians and Surgeons, '90, and New York Homeopathic Medical College, '91, is practicing medicine in this city.—J. M. Wainwright, who organized for the war with Spain a company of volunteers, which became Company L of the 12th Regiment, N. Y. V., was appointed captain of volunteers in May, 1898, and was honorably discharged in September.

1888

Secretary: William R. Powell, 254 West 75th Street, New York City.

W. B. Aitken has since 1890 practiced law in this city, residing at 702 Madison Avenue. He was married January 20, 1897, and his wife died November 1, of the same year, leaving a little daughter.—F. B. Allin was for some years after graduation in a bank, but is at present engaged in the insurance business. He still resides at 214 Central Park, South.—A. DeL. Ayrault was a teacher in Washington College, Tacoma, in the years 1889–1892, and since that date has taught in various boys' schools in the Eastern states. His prospective address for the next two years will be: Care of O. J. C. Rose, Geneva, N. Y.—C. S. Baldwin was successively tutorial fellow and instructor in rhetoric in Columbia from 1888 until 1895. He was then called to Yale University, and in 1898 he was appointed assistant professor of rhetoric. He was married September 20, 1894. His wife died January 14, 1897, leaving one son.—W. L. Bogert has since 1894 been studying music professionally, with the intention of becoming an orchestral conductor. Since 1894 he has been trustee and secretary and treasurer of the Free Library Association at Flushing, N, Y., at which place he resides; and in 1897 he became trustee of the Queens County Savings Bank.—R. C. Bunzl, after various business enterprises and wanderings, writes in 1898 from San Pedro, Honduras: "I at present own a banana plantation, which I am successfully cultivating, but shall shortly go into the rubber business, which is the real money making business of this country."—H. B. Ely has devoted his time since graduation to the study and practice of law at 23 West 26th Street. He was married March 1, 1892, and has three children, a son and two daughters.—Douglass Ewell, M.D., Physicians and Surgeons, '91, served for six years at Roosevelt Hospital. He was assistant demonstrator of anatomy and clinical assistant in the College of Physicians and Surgeons from 1895 till his death, March 22, 1897.—H. D. Ewing is practicing law at 41 Wall Street. Until 1892 he was president of the class, and was married on April 14, 1898.—J. R. Fairchild is now with the American Book Co. He was married on October 25, 1893, and has one child.—J. P. Gilford resides at 131 East 46th Street, is married, and at latest accounts had a daughter.—Robert Goeller was from 1893 to 1897 attorney of the Legal Aid Society, and during the four years that he held this position he had 36,000

clients. He is now practicing law at 207 Broadway, under the firm name of Goeller, Shaffer & Eisler.—Reginald Gordon has been instructor in physics at Columbia since 1896. He was married October 24, 1891, and has two sons.—P. F. Hall has since 1893 been rector of St. Timothy's Church, Catonsville, Maryland, and is also examining chaplain to the Bishop of Maryland. He was married on April 25, 1893, and has three sons.—L. M. Hammer was at latest reports proprietor of a wholesale and retail provision store at 1183 Madison Avenue.—H. S. Harper, of Harper Brothers, is married and resides at 21 Madison Avenue.—F. R. Hathaway was in 1892–1893 reader in statistics at the University of Chicago. In 1894 he entered business, and is now treasurer of the American Baptist Home Mission Society. He was married September 22, 1892, and has a daughter and two sons.—Willard Humphreys practiced law until 1892 and was then appointed instructor in Latin at Princeton. Since 1897 he has been professor of German there. He was married June 1, 1898.—A. M. Kane, after serving on the house staff of the City Hospital and as assistant in Vanderbilt Clinic, is now practicing medicine at 347 West 34th Street.—G. F. Little is a physician at 469 Clinton Avenue, Brooklyn.—Goodhue Livingston is a practicing architect at 287 Fourth Avenue. He was married April 8, 1896, and has a son.—J. J. Mapes, M.D., Physicians and Surgeons, '91, was for two years on the staff of of the New York Hospital and afterward pursued his studies in Vienna and Paris. In 1895 he became resident physician of the Nursery and Child's Hospital. He died April 10, 1896.—W. H. Merriam was in 1890 reporter on the London *Times*. He is now practicing law at 69 Wall St.—C. C. Miller is a lawyer at 15 Wall Street. He was married on June 21, 1892, and has two children.—S. L. Moody was at latest accounts a lawyer in the offices of Goepel & Raegener, 280 Broadway.—Kneeland Moore is at present practicing law at 132 Nassau Street. He was married August 3, 1893, and has one daughter.—E. E. Murphy was married October 28, 1891, and lost his wife on September 27, 1892, shortly after the birth of his only child, a daughter. He married again June 23, 1897, and is at present a lawyer at 120 Broadway.—F. H. Palmer was attacked not long after graduation by tuberculosis and was compelled to pass a

large part of his time in the Adirondacks. He died April 22, 1899.—A. F. Parker was assistant in physics at Columbia until his death in a railroad accident, July 11, 1889.—W. R. Powell is engaged in mercantile business. He served for six years in the First Naval Battalion.—J. D. Prince was a member of the second expedition to Babylonia under Dr. Peters. Since 1892 he has been professor of the Semitic languages and comparative philology at New York University. He was married October 5, 1889, and his only child, a son, is the class baby and winner of the class cup.—G. F. Putnam is engaged in the practice of law at Salt Lake City, Utah. Since January, 1897, he has been assistant county attorney. He was married December 12, 1895, and has one son.—Lawrence Reamer is a journalist, 170 Nassau Street.—H. A. Sill, after studying at Columbia, Oxford and Berlin, is now at Halle, working upon his dissertation for Ph.D.—B. B. Sloan, until recently trust clerk at the Farmers' Loan and Trust Company, is now on the Stock Exchange. He was married November 27, 1889, and resides at 14 East 36th Street.—J. S. Sutphen, Jr., is in the plate glass business at 11 Desbrosses Street. He was married December 16, 1890, and has two sons and a daughter.—G. M. Tuttle, M.D., Physicians and Surgeons, '91, has since 1894 been practicing at 2942 Washington Avenue, St. Louis, Mo. He expects to be married this fall.—Guy Van Amringe is a lawyer at 141 Broadway.—H. N. Vedder, M.D., Physicians and Surgeons, is practicing medicine at 708 Madison Avenue. He was married December 12, 1894, and has two sons.—E. C. Villaverde was married June 12, 1889, and was at the latest accounts engaged in the advertising business. So far as known, he is the one member of the class to try to enlist in the Spanish War, but was rejected because of his small stature. His present address is 45 West 32d Street.—George F. Warren, Jr., has since 1894 been a member of the law firm of Anderson, Anderson & Warren, 27 William Street. He was married June 5, 1895, and has one child, a daughter.—Lloyd Warren, after studying architecture at Columbia and abroad, recently began practicing his profession at 3 East 33d Street.—G. M. West was in 1894 appointed curator of physical anthropology in the Field Columbian Museum. He was married August 1, 1894, and is at present living at Garnerville, N. Y.—William Wiener has been since

1892 official chemist to the health board of Elizabeth, N. J.; and since 1893 he has held the position of instructor in the Newark Evening School and professor in the Newark High School. He was married January 19, 1892, and has two children.—Frank Wilcox devoted himself to the study and practice of law until his death on October 4, 1894.—B. D. Woodward is still instructor in Romance languages at Columbia; but has been granted leave of absence, to become assistant commissioner-general to the Paris Exposition, and will have his headquarters at 20 Avenue Rapp, Paris, until 1901. From 1892 to 1899 he was secretary and treasurer of the class.—C. H. Young, after studying at Columbia and Athens, became instructor in Greek at Columbia. He was married August 18, 1891, and has one son. He has been since 1892 president of the class, and since 1897 secretary of the Archæological Institute of America and *ex-officio* a member of the Council. He has recently been appointed business manager of the American Journal of Archæology.

1892

Secretary: Arthur T. Hewlett, 68 Remsen street, Brooklyn.

R. A. Ashworth is now pastor of the First Baptist Church of Bridgeton, N. J.—J. A. Barnard is head of the bond department of Spencer Trask & Co., bankers.—E. F. Fiske is visiting physician to the branch of the Eastern District Homeopathic Dispensary, the Hahnemann Hospital and other institutions. He was married January 4, 1899, to Miss Pauline Dean.—J. B. Sill is a curate to the Church of the Redeemer, New York City.—S. S. Wise is Rabbi of the Madison Avenue Synogogue and honorary secretary of the American Federation of Zionists.

1896

Secretary: J. R. Atwill, 1721 Pennsylvania Ave., Kansas City, Mo.

J. R. Atwill was ordained deacon last year in the Protestant Episcopal Church, and is in charge of four missions, with headquarters at Kansas City, Mo.—H. L. Fick graduated from the Episcopal Seminary of Philadelphia in June and will be ordained deacon during the month.—E. W. Gould and R. H. Halsey graduate this year from the College of Physicians and

Surgeons.—W. C. Kretz is fellow in astronomy at Columbia. —A. L. Kroeber, for two years assistant in the department of rhetoric, has been appointed fellow in anthropology.—J. C. Levi was admitted to the Beaux Arts in April, 1898.—A. W. Maddox will graduate from the Union Theological Seminary in June.—F. A. Peters, who was ordained Deacon June 5, 1898, graduates from the Union Theological Seminary in June.—E. G. Pitblado graduates from the Berkeley Divinity School in June.—J. M. Proskauer graduates this year from the Law School and expects to begin practice in New York. With P. E. Brodt,' 91, he coached the Columbia debating team for the contest with the University of Chicago on April 14.—S. S. Seward, Jr., has been for two years assistant in literature under Professor Woodberry.—John Tilley, Jr., graduates this year from the General Theological Seminary.—Carl H. Uhl died February 5, 1899.—E. B. Woodruff has charge of St. Paul's Church, Windsor Locks. He graduates this year from the Berkeley Divinity School.

NECROLOGY

The College

1844. Clement W. Alburtis. April 19, 1899.
1860 (l, '62). Robert Goelet. April 27, 1899.
1866 (l, '68). Daniel Lord. April 5, 1899, aged 52.
1867 (l, '69). Aaron Ernest Vanderpoel. September, 1898, aged 53.
1886. Joseph Lawrence. December 9, 1898, aged 32.

School of Law

1865. George Pliny Kingsley. January 19, 1899, aged 56.
1878. Frank Crew Willcox. March, 1899, aged 44.
1883. Henry Pierson Johnes (A.B., Yale College, 1881). November 28, 1898, aged 35.
1887. Abraham Leopold Fromme (A. B., College City N. Y.) October 2, 1898, aged 32.

College of Physicians and Surgeons

1872. John Henry Seabary. March 6, 1899, aged 51.
1880. William Cunningham Campbell (A. B., Coll. N. J., 1877, and A.M., 1880). February 5, 1898, aged 44.

1881. B. Abbott Lindsay. November 13, 1898, aged 42.
1881. George Trowbridge. September 10, 1898, aged 43.
1883. John Richard Conway. 1899.
1885. Frank Taylor Barwis. March 9, 1899, aged 38.
1892. Willard Avery Hencock. February 24, 1899, aged 32.

SCHOOLS OF APPLIED SCIENCE

1868. William Allen Smith. March 25, 1899, aged 50.
1893. William Turtle.

NON-GRADUATES

1851. Rev. Samuel Mitchill Akerly.

WILLIAM ALLEN SMITH, E.M., '68. Died March 25, 1899.

The Alumni Council of Columbia University, convened in special session after the death of Mr. William Allen Smith, late Secretary of the Council, desires to enter upon its records an expression of esteem and affection for him and of regret because of his sudden death.

Graduated as an Engineer of Mines in 1868, from the School of Mines of Columbia University, then but recently established, he had the distinction of being among the first, as he has always been one of the most respected, of its alumni. In 1895 he was chosen President of the Association of the Alumni for the ensuing year. So acceptable to the Association was his presidency that he was successively re-elected, until at his own express desire, in 1898, he was relieved of the responsibility. He brought to this work the same devoted interest and self sacrifice that have characterized all his public relations.

Professionally he paid special attention to the department of metallurgy, having to do with the production and manufacture of iron, and was Secretary of the Harvey Steel Company. He carried successfully the burden of the technical management of important litigations relating to patents upon the process, which has had an all-important bearing upon the development of armor plate in America.

When it was decided to create the Alumni Council, Mr. Smith was an early appointee of the School of Mines Alumni Association, served actively in the work of legislation as secretary of

its committe on organization, and was thereafter chosen Secretary of the Council. So faithfully and conscientiously did he attend to the exacting details of this work, and so satisfactory was his discharge of the duties of his difficult office, that his colleagues re-elected him year after year; and it adds to the sense of personal loss that the Council is to be deprived of his devoted services. He was the speaker for his Association at the first formal reunion of the associated alumni at the Commencement of 1898, and was also the speaker at many informal gatherings for which the body had provided.

But the members of the Council feel most strongly the sense of personal bereavement in the loss of their friend and the man. He had a rare combination of strength with warmth of affection; and his genial personality, his unfailing cheerfulness, his sound judgment, his tact, his high Christian character and his unselfishness, will live in memories which his colleagues will long cherish. When personal affection speaks so strongly, it is difficult to make a formal expression of the desire that those who have been most intimately affected by Mr. Smith's death should know that they are not alone in their grief, and that they have the heartfelt sympathy of his friends and former associates.

The Chairman of the Council is therefore requested to inform the family of Mr. Smith of the action of the Council, by such letter as may be appropriate, and to transmit to them a copy of this minute.

Resolved: That copies of this minute be published in the UNIVERSITY QUARTERLY and in the *Columbia Spectator* and the *School of Mines Quarterly*.

SUMMARIES OF UNIVERSITY LEGISLATION

THE TRUSTEES. MARCH MEETING

The Finance Committee reported that the Treasurer had received payment of the bequest of $10,000, left to the University by the will of Charles Bathgate Beck, of the class of 1877, to be applied to the endowment of a scholarship and of a prize to be awarded to the student passing the best examination in real estate law. It also reported that Alexander Moncrief Proudfit, of

the class of 1892, had left legacies to the college of two sums of $15,000 each, one for the endowment of a fellowship to be known as the Alexander Moncrief Proudfit Fellowship, for the encouragement of the study of English Literature, to be open for competition to persons who, being the sons of native-born American parents, shall have taken the degree of bachelor of arts after a three years' residence in Columbia College, and who shall, while enjoying such fellowship, remain unmarried; and the other for the endowment of a fellowship to be known as the Maria McLean Proudfit Fellowship, for the encouragement of advanced studies in medicine, to be awarded under similar conditions to students pursuing advanced studies in medicine under the direction of the Medical Faculty. The committee likewise reported the sale of the Wheelock property, and their action was formally approved and ratified.

The Committee on Education reported that, under the resolution adopted at the last meeting, they had authorized the announcement of the establishment of a summer school at the University in the summer of 1900.

The Committee on the Library were authorized to invite the Rev. S. D. McConnell, D.D., to preach the baccalaureate sermon.

The thanks of the Trustees were voted to Dr. J. Ackerman Coles for the gift of a bronze bust of Cicero, cast especially for the University by Barbedienne, of Paris; also to Mr. Thomas F. Rowland, of the Continental Iron Works, and to Mr. Adolph Bender, of the De La Vergne Refrigerator Company, for a gift to the Department of Mechanical Engineering.

The President was authorized to confer with the Chamber of Commerce in relation to the establishment of a course in commercial education, subject to ratification by the Trustees.

The office of Professor of Anthropology was established. The title of the Department of Psychology was changed to the Department of Psychology and Anthropology, and the chair of Anthropology was attached to this Department.

Amendments to the statutes were adopted, providing for the award of the Alumni Competitive Scholarship and for the award of other scholarships by the Faculty of the College.

A resolution was adopted, recommending the passage of the bill to protect Amsterdam Avenue, and the President was requested to urge upon the Legislature the need of its enactment.

THE TRUSTEES. MAY MEETING

The Finance Committee reported that a large portion of the University debt had been refunded, by the issue of bonds to the amount of $2,500,000, at three per cent. interest, secured by a mortgage to the United States Trust Company, as trustee, upon the real estate owned by the University between 49th and 51st streets, and Fifth and Sixth Avenues. The Committee also submitted their report for the fiscal year beginning July 1, 1899, stating that the President had notified the Committee that it was his intention to reimburse the University for interest paid upon moneys borrowed for the construction of the Library, which interest, he estimated, would amount to $75,000 on June 30, and offered the following resolution, which was adopted:

Resolved, That the Trustees hereby extend to President Low their grateful thanks for his generous offer to pay interest to this corporation on the sums advanced by it towards building the new Library; and they accept with the greater pleasure this additional example of the President's wise liberality as evincing his unchanging devotion to the welfare of this University.

The Treasurer was instructed to deposit the sum to be received from President Low in a special account at interest, to be known as the Special Guarantee Fund, and to be drawn upon only as directed from time to time by vote of the Trustees.

The following sums were appropriated for the current expenses of maintenance and operation, including interest, for the fiscal year ending June 30, 1900, viz.: For educational and operating expenses, $875,770; for interest on bonds or other indebtedness of this corporation, $133,543.74; making in all $1,009,313.74. This sum was directed to be paid (1) out of the income of special funds applicable to the purpose; (2) out of payments to be made by Barnard College and other persons for designated purposes; (3) out of the general income of the corporation; (4) out of interest receivable; and (5) out of any funds that may be contributed for the purpose of guaranteeing or making good deficiencies in expenses.

The Committee on Education presented a report, with a proposed statute providing for the Charles Bathgate Beck Prize Scholarship; and also a report in reference to the Summer School, recommending a resolution, which was adopted, author-

izing the President to appoint Professor Butler Director of the School, and Mr. Nichols (Secretary of Teachers College) Recorder of the School, and to designate, as the Administrative Board to have charge of the School, the President, the Director of the School and the Dean of Teachers College.

The Committee on the Library submitted a letter from Mr. George H. Baker, tendering his resignation as Librarian, with a report expressing their appreciation of the services rendered by Mr. Baker, and offered resolutions, which were adopted, retiring Mr. Baker as Librarian Emeritus. The committee on the Library also submitted a report, recommending the appointment of James H. Canfield, LL. D., as Librarian for the term of three years from July 1, and the recommendation was unanimously adopted.

A letter from the Waring Memorial Fund Committee was presented, stating that the Committee were prepared to pay to the University the sum of $100,000, in fulfillment of the offer previously made, to be held by the University in accordance with the terms of the agreement accompanying the letter, providing that the fund should be known as the Waring Municipal Fund, that one-half be held for the benefit of Mrs. Waring during her life and one-half for the benefit of Miss Waring during her life, and that the income be paid to them respectively; that upon the death of each the income upon the principal held for her benefit be applied to the purposes of instruction in municipal affairs in such manner as the President and the Trustees of the University shall direct. The agreement was formally approved, and it was

Resolved, That the Trustees, in accepting this trust, express their grateful pleasure for the opportunity thus given to them to honor and perpetuate the memory of the late Col. George E. Waring, and to make the record of his efficient public service in the City of New York an inspiration and a guide for generations to come.

A letter was also received from the George William Curtis Memorial Committee, tendering the sum of $10,000, for the endowment of a fellowship to be awarded every third year, to be open for competition to graduates of all colleges and scientific schools, and to be awarded to the candidate submitting the best essay or public address on "The Immediate Duty of the American Citizen," the recipent of the fellowship undertaking to devote himself to the study of the science of government, with a

special view to its application to the condition of the United States, or of the State or City of New York, and to publish a monograph upon the subject; and it was

Resolved, That the tender of a fellowship, to be known as the George William Curtis Fellowship in Political Science, conveyed in the letter, dated March 21, 1899, of William Potts, Secretary of the George William Curtis Memorial Committee, be and hereby is gratefully accepted, upon the conditions outlined in said letter.

Resolved, That the thanks of the Trustees be tendered to the George William Curtis Memorial Committee, for this most welcome association with Columbia University of the memorial of Mr. Curtis, whose public spirit and private character alike it will be the pleasure of the University to keep in perpetual memory.

The President announced the gift of $10,000, from an anonymous friend of the University, to be used for the purchase of books for the Library, and a gift of $10,000, from Mr. Isaac Michael Dyckman for the encouragement of Biological Research, and it was

Resolved, That the gift of $10,000, from Mr. Isaac Michael Dyckman, in memory of his uncles, Dr. Jacob Dyckman, of the Class of 1810 and of 1813 of the College of Physicians and Surgeons, and James Dyckman, of the Class of 1811, be and hereby is gratefully accepted. The said fund will be known as the Dyckman Fund for the Encouragement of Biological Research, and the interest derived therefrom shall be devoted annually to such objects consistent with the purposes of the gift as shall be recommended by the department of Zoölogy and approved by the President.

Resolved, That the thanks of the Trustees be tendered to Mr. Isaac Michael Dyckman for this welcome memorial of two of the former students of the University, and for the generous provision which he has made in the interest of biological research.

A letter was submitted from the Committee having in charge the fund raised in honor of the late Anton Seidl, offering to present to the University the money in their hands, amounting to $11,750, to be held as a fund, the interest to be paid to Mrs. Seidl during her life, and upon her decease to be applied to the endowment of the Seidl Fellowship in Music, the fellowship to be awarded at least every second year to the most promising condidate, either man or woman, prepared to devote himself or herself to the study of musical composition at Columbia University or abroad; and it was

Resolved, That the Trustees will accept with pleasure the trust fund tendered by the Committee having charge of the memorial performance

held at the Metropolitan Opera House, March 23, 1899, in honor of the late Anton Seidl; the conditions of the trust being fully set forth in the letter to the President dated April 29, 1899, signed by Mrs. Walston H. Brown, Mrs. William Loomis, Mrs. Henry T. Fincke, Mrs. Gilbert E. Jones, Miss Elizabeth H. Welling, Mr. Walston H. Brown, Mr. Edgar J. Levey, Mr. Henry T. Finke and Mr. Richard W. G. Welling.

Resolved, That in accepting this trust, the Trustees desire to place upon record their appreciation of the opportunity to associate with the University the name of Anton Seidl, whose services in the cause of music in this city will thus be held in lasting remembrance.

The thanks of the trustees were also voted to Miss Catherine W. Bruce, for the gift of $10,000 to the department of astronomy, to be used for the measurement and discussion of astronomical photographs; to the Hon. Roswell P. Flower, for a gift of $1,000 to the general guarantee fund of the University for the current academic year; to Mrs. Henry D. Van Nostrand, for a collection of rare shells made by her late husband; to the Minister of the Interior at The Hague, for the gift of a valuable work illustrating the Ryks Museum at Amsterdam; to Messrs. Warner & Swasey, of Cleveland, Ohio, for a gift to the department of mechanical engineering.

A communication was received from the Chamber of Commerce, relative to the establishment of a collegiate course in Commerce under the charge of the Faculty of Columbia College, in accordance with the plan proposed by President Low, and resolutions adopted by the Chamber of Commerce approving the plan and authorizing the president and secretary of the Chamber to enter into an agreement with the Trustees of Columbia College for the establishment of the course, whenever the Chamber shall have received guarantees that the money necessary to maintain the same shall be forthcoming; and it was

Resolved, That the tentative proposition submitted by the President to the Special Committee of the Chamber of Commerce on Commercial Education, and by it submitted to the Chamber April 6, 1899, be and hereby is confirmed; and that, upon the Chamber's undertaking to make the subvention called for by said proposition, the Trustees hereby agree to establish a collegiate course in Commerce substantially upon the plan outlined therein.

A communication was received from the New York Botanical Garden, relative to the transfer to the Garden of the Herbarium the Botanical Library belonging to the University, pursuant to the

terms of the agreement between the Garden and the University; and a resolution was adopted authorizing the transfer.

A communication was received from the United States Commission to the Paris Exposition, inviting the University to participate in the Educational Exhibition of the United States and to send an exhibit illustrating particularly the pedagogical work of the University, as shown by Teachers' College, and the work of the Library, as illustrating the relation of the University Library to the work of the students. The sum of $1,000 was appropriated for that purpose.

The President reported that Professors Munroe Smith, Pierre DeP. Ricketts, Brander Matthews and Frank J. Goodnow were entitled to leave of absence under the statute, and would be absent for the whole or a portion of the next academic year. A resolution was adopted re-appointing Professors Calvin Thomas, A.M., Carlo Leonardo Speranza, A.M., Edward Alexander MacDowell, Mus. Doc., and Lucien Marcus Underwood, to the chairs now held by them, and appointing Franz Boas, Ph.D., as Professor of Anthropology. The appointments by the Medical Faculty of Edwin B. Craigen, M.D., as Professor of Obstetrics, and of Professor Russell H. Chittenden, Ph.D., as Director of the Department of Physiological Chemistry and Lecturer therein, were confirmed. The resignation of Dr. Edwin B. Craigen as Secretary of the Faculty of the College of Physicians and Surgeons was accepted, and Dr. Frederick J. Brockway was appointed in his place. Resolutions were also adopted confirming the appointments made by the various Faculties.

Professor James E. Russell, Dean of Teachers College, and Professor Frank N. McMurry, Professor of the Theory and Practice of Teaching in Teachers College, were assigned seats in the Faculty of Philosophy; and Professor Charles R. Richards, Professor of Manual Training in Teachers College, was assigned to a seat in the Faculty of Applied Science. Leave of absence was granted to Professor E. D. Perry, Jay Professor of Greek, for the academic year 1900–1901, to enable him to serve as professor in the American School of Classical Studies at Athens.

Leave of absence was granted to the President for the remainder of the current academic year, and Professor John Howard Van Amringe, Dean of the College, was appointed Acting-President during his absence.

University Council

The University Council has held three meetings during the year. The following action of general interest has been taken:

The Council has expressed its approval of the degree of Master of Science as an honorary degree.

The registration under the Faculties of Political Science, Philosophy and Pure Science is to be hereafter conducted in the President's office, instead of by the several Deans, as hitherto. A common circular and a common list of students will be issued for these three faculties.

The Council has expressed its approval of making the Schools of Law and Medicine graduate schools, whenever the Trustees shall think the step practicable. Four years notice was suggested for each change. This step has since been taken by the Law School.

The Council is now empowered at its discretion to allow students who have taken the degree of Doctor of Philosophy at Columbia to continue their researches in the laboratories of the University without payment of fees.

The University Fellowships were awarded April 18th. It is interesting to note that, of the twenty-four successful candidates, nineteen have been in residence and seven have held University Scholarships. There are four reappointments. The parentage of degrees is as follows: University of Minnesota, 3; Toronto University, Vermont University and Wesleyan University, 2 each; Columbia, Delaware, Harvard, College of the City of New York, Pennsylvania State College, Princeton, Rutgers, Stanford, Trinity (N. C.), Yale, and the state universities of Indiana, Iowa, Nebraska, North Carolina and Texas, 1 each.

UNIVERSITY STATISTICS

This table shows the number of students *now* registered, May 27, 1899, compared with the *total* number registered at the end of the last academic year. It will be observed that the various schools are classified in three groups: (1) undergraduate schools; (2) non-professional graduate schools; and (3) professional schools. On this basis, it appears that our gain, up to this time, is 390. Of this number 297 are due to the union of Teachers College with the University. Aside from this addition, our gain is 93. The undergraduate schools have gained 96 and the non-professional graduate schools only 26*; while the professional schools have lost 24.

REGISTRATION AT COLUMBIA IN 1897–8 and 1898–9

	First Year	Second Year	Third Year	Fourth Year	Specials	Graduates	Total, 1898–9	Total, 1897–8	Gain over 1897–8
Columbia College	136	89	87	53	36		401	335	66
Barnard College (undergraduates)	45	38	24	24	71		202	172	30
Total undergraduates							**603**	**507**	**96**
Faculties of Philosophy, Political Science and Pure Science							271	263	8
Barnard College (graduates)							76	58	18
Total non-professional graduate students							**347**	**321**	**26***
Faculty of Applied Science	196	113	62	42	38	8	459	429	30
Faculty of Law	133	105	107		4		349	367	—18
Faculty of Medicine	194	161	179	139	54		727	763	—36
Teachers College							297		297
Total professional students							**1832**	**1559**	**273**
Auditors							29	34	—5
Total in University							**2811**	**2421**	**390**
Extension students, Teachers College							1173		
Grand Total							**3984**		

*The smallness of this gain is due to the fact that many students primarily registered in Teachers College, who are also doing graduate work, are now classed as professional students.

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